

TECHNOLOGY

REVIEW

May 1958



technology review

Published by MIT

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Right off the Wire

An automatic ultrasonic welder makes tack welds without heat at the rate of 200 inches per minute.

Miniature mercury lamps are being used in batteries of twelve for night aerial photography. An area of sixteen square miles can be lighted from an altitude of 20,000 feet.

A new electron microscope permits the examination of opaque specimens.

An electronic converter makes any radio an appliance timer.

A three-year test of a 43,000-pound ship's propeller made of nialite (nickel-cadmium bronze) shows no wear caused by erosion or cavitation.

D. W. Kitchin and O. S. Pratt of Simplex recently made two major discoveries in studying corona spaces in cables — one, by observing internal pressure decrease, and another by mapping with silver cyanide solution.

A distillation column sixteen feet high and made entirely of glass is said to be the world's largest. It will be used to make silicon carbide with impurities of only one part in ten billion.

It has been demonstrated for the first time that petroleum is a colloidal dispersion. This knowledge may help in obtaining greater recovery from existing oil reserves.

A giant machine to hold large assemblies for welding can lift, tilt and rotate weights up to forty tons.

A tiny photoflash bulb is said to give the same amount of light as one four times its size. It uses zirconium rolled to foil gauge.

Over 1300 industrial concerns in this country are now using radioactive byproducts. About 200 were added to this list during the last year.

Air power for generators in remote installations, such as aids to air or marine navigation, can be supplied by a modern windmill which has a thirty-foot, three-bladed "propeller." It maintains constant speed.

Temperatures as high as 3500°F. are resisted by a new molded plastic.

Polyethylene is now made with an ultraviolet inhibitor and is said to last four times longer than the unprotected form.

Further information on these news items and on Simplex cable is available from any Simplex office. Please be specific in your requests.

Nuclear reactors may be used as economical sources of heat to convert coal into gaseous or liquid fuels.

A stereo cartridge to play the 45-45 Westrex groove records is in production.

South Carolina is putting its automobile drivers' licenses on photosensitive, anodized aluminum. They will be used for four years.

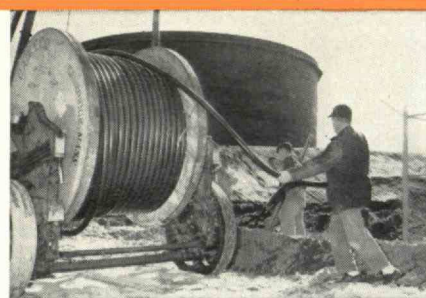
Speeds of 15,000 miles per hour and temperatures as high as 18,000°F. can be reached momentarily in a new wind tunnel being built to test missile nose cones.

"Silicone Insulation as Applied to Wire and Cable" is the title of a research paper by P. H. Ware of Simplex. This insulation is trade named "Thermoplex".

Flexible tanks of rubberized fabric are being made for use in the oil fields. They hold 15,000 gallons, but can be rolled into a package eight feet by two and one half feet when empty.

Kraft paper, shrunk after forming, is being used for shopping bags and multi-walled sacks. It stretches under tension and is said to be twenty per cent stronger than papers now in use for this purpose.

A portable scale that needs no pit is made for roadside weighing. It can handle vehicles sixty feet long weighing seventy tons.



Protection plus

C-L-X (sealex) is a continuous, lightweight, exterior metallic cable sheath recently introduced by Simplex. Impervious to gases, chemicals and water, C-L-X is ideal for almost any installation including aerial applications, industrial distribution and direct burial, as shown above. Practically any type of cable core can be used for such applications as power, control, signal and communication installations.

Other features include extreme pliability, ease of handling, long life, easy installation and relocation, and color coding for voltage or circuit identification.

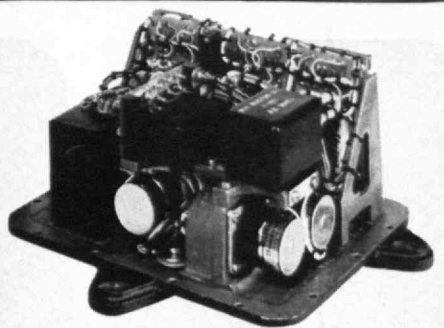
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Three Gnat Gyros in Honeywell Three-Axis Turn Rate Transmitter. Size: 8.6" x 6.3" x 5.24". Weight: 5 pounds.



Convair F-106 all-weather jet interceptor incorporates Honeywell Three-Axis Turn Rate Transmitter in flight control damper system

Three-axis control at all speeds and altitudes



Gnat Rate Gyro shown $\frac{1}{3}$ size. Weight: 3.8 ounces.

The Honeywell Three-Axis Turn Rate Transmitter, featuring three Gnat miniaturized gyros, was selected for the new Convair F-106 "Delta Dart" all-weather jet interceptor. Built into the stability augmentation sub-system of the jet's flight control system, the Transmitter detects rate of turn about the yaw, pitch and roll axes and responds with an output signal whose voltage is proportional to these input rates of turn.

This system is designed to operate under the most severe environmental conditions to which a combat aircraft might be subjected. The Honeywell Gnat Rate Gyros are easily capable of withstanding the severe shock, vibration and temperature requirements of this application and as such are mounted directly upon the base casting without shock mounts to optimize dynamic characteristics of the system.

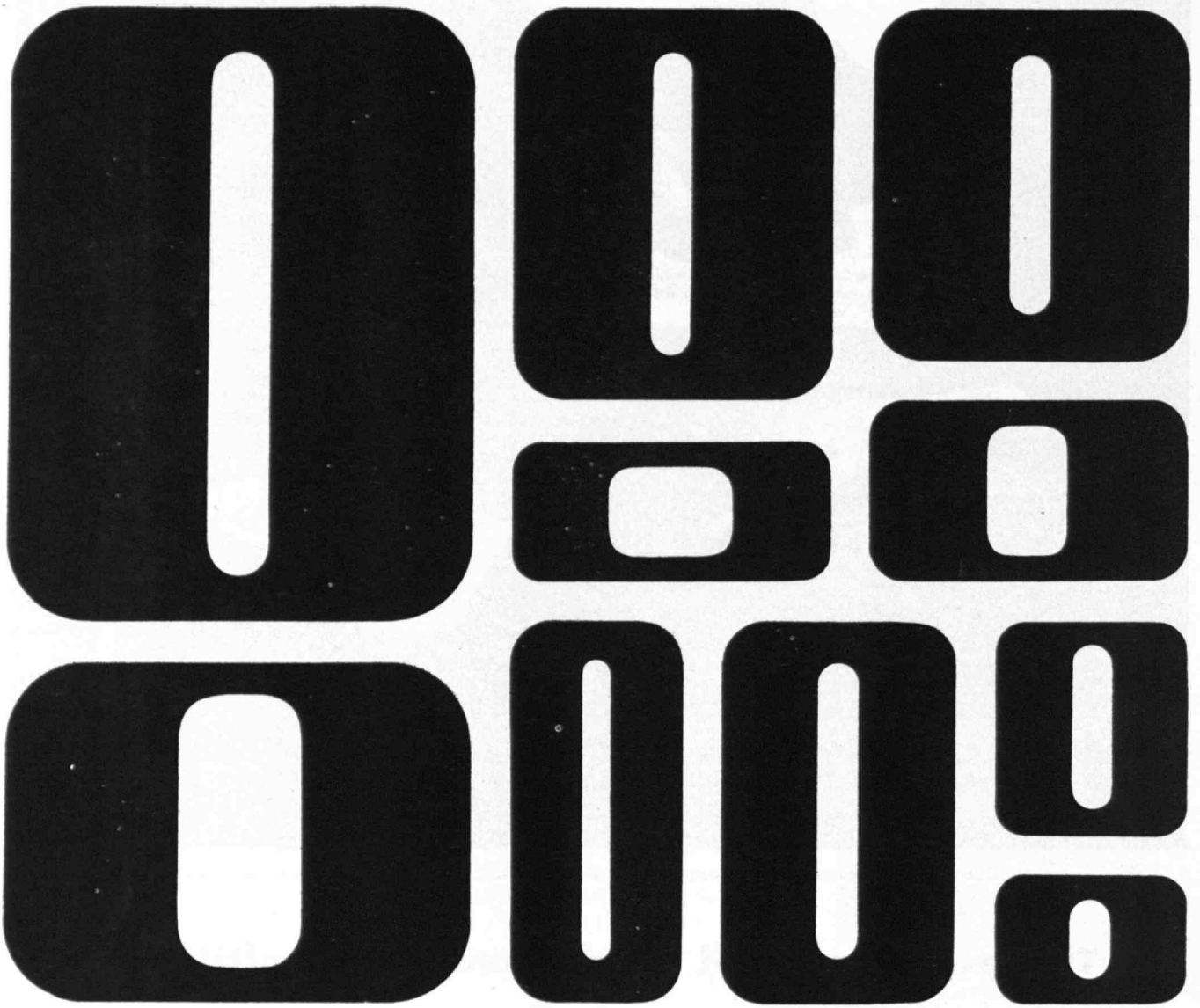
The electronic portion of the Turn Rate Transmitter amplifies and demodulates the Gyro output signals to provide polarity reversing d-c outputs proportional to the corresponding input rate to each Gyro.

Investigate Honeywell's ability to develop, engineer and produce flight control systems for today's most advanced aircraft and missiles. Write for Bulletin GN to Minneapolis-Honeywell, Boston Division, Dept. 1, 1400 Soldiers Field Road, Boston 35, Mass.

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Military Products Group



Olivetti makes office equipment of 10 distinct types. This wide range of product has given Olivetti an unusually well-rounded familiarity with the problems of the modern office; which, in turn, has helped Olivetti to develop money-saving solutions to many of those problems, and to build them into its machines.

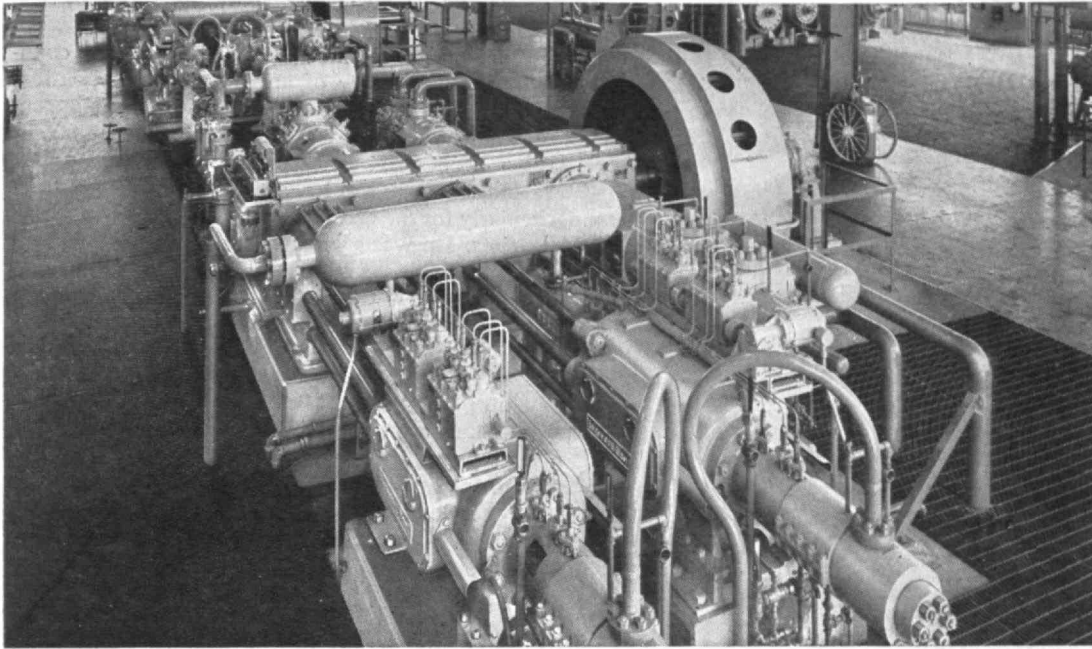
In the U.S.A. Olivetti presently offers its electric, standard, and portable typewriters and its adding, calculating and bookkeeping machines. Olivetti also makes teleprinters, dictation machines, visible filing systems, filing cabinets, and machine tools. Spare parts and service are quickly available through branch offices and through dealers in 48 states. Olivetti Corporation of America, 580 Fifth Avenue, New York 36, N.Y.



The Olivetti Tetractys printing calculator is unique in several ways. It is *fast*. It has *two* registers. It has an automatic constant and memory. It combines calculations, eliminating re-entries, and gives individual totals and grand totals. It is easy to operate.

olivetti

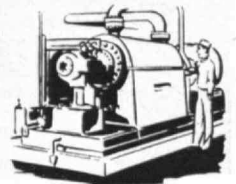
with **INGERSOLL-RAND**



Seven electric-driven Ingersoll-Rand reciprocating compressors totaling 21,900 horsepower are at work in this large ammonia synthesis plant. The units in the foreground compress mixed gases to more than 12,000 pounds per square inch.



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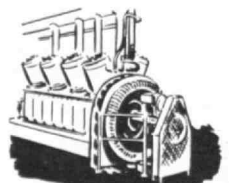
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THE TABULAR VIEW

Tranquil Cove. — For many years the pages of The Review have been enriched by RAYMOND E. HANSON, '03, whose serene landscape photographs have helped counterbalance the hurly-burly of an industrial way of life. Early in his career, Mr. Hanson was professionally engaged in chemistry. For at least the last quarter of a century, he has been a free-lance photographer; he became internationally known for his writings on photography and particularly for the artistic and technical quality of his pictorial prints. He was a leading member of the Boston Camera Club, which he joined in 1918. He was a keen student, rising early in the morning, as he said, "because there is so much to learn." His visits to The Review Office invariably brought forth discussions on history, ethics, philosophy, education, or science and, almost incidentally, on photography. Mr. Hanson died at his home in Melrose, Mass., on March 28; but examples of his work (as on pages 342 and 360 of this issue) can be drawn on for future presentation to Review readers.

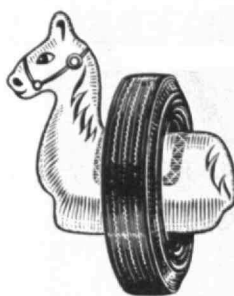
Engineer's Role. — Support for the important professional work of engineers was given by Acting President J. A. STRATTON, '23, at the Regional Meeting in Washington, D.C., on March 1. Except for brief introductory remarks relating specifically to the Regional Conference, Dr. Stratton's remarks appear on page 351 of this issue. Biographical details of Dr. Stratton's brilliant career were recorded in Tabular View in the February Review.

American Science. — Also at the Regional Conference in Washington on March 1, JAMES R. KILLIAN, JR., '26, surveyed needs of American science. Dr. Killian's remarks (which appear on page 353) have particular significance since they represent the point of view of Special Assistant to the President for Science and Technology. Dr. Killian's achievements were chronicled in the December, 1957, issue of The Review, which announced his appointment to his present important post in Washington.

Beyond Nuclear Physics. — The current status of particle physics is reviewed (page 357) by M. STANLEY LIVINGSTON, Professor of Physics at M.I.T. and, since 1956, Director of the Cambridge Electron Accelerator at Harvard University. Text of Dr. Livingston's article was originally presented at the Regional Meeting in Washington on March 1. Professor Livingston received the A.B. from Pomona College in 1926, the M.A. from Dartmouth College in 1928, and the Ph.D. from the University of California in 1931.

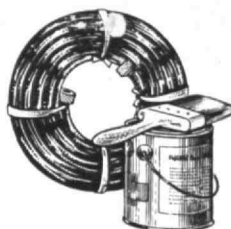
Our Foreign Aid. — More than 60 trips to various parts of the world (particularly to the Middle East and Far East) together with direct contacts with foreign governments, native labor, and a variety of economic, engineering, and human relations problems provide the background for the article (page 359) by HARRY A. KULJIAN, '19. The Kuljian Corporation, established in Philadelphia in 1931, has had responsibility for designing and building more than 70 power plants on four continents. As its president, Mr. Kuljian has had ample opportunity to assess the workings of our Foreign Aid Program; his views and proposals have attracted the attention of members of Congress. In 1953 Mr. Kuljian was awarded the D.Eng. from Drexel Institute of Technology and in 1955 was Pennsylvania's "Engineer of the Year."

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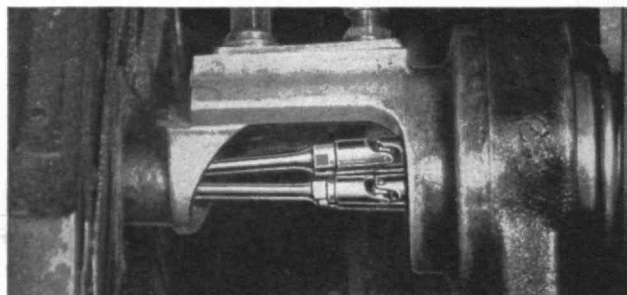
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MAIL RETURNS

RETARDING INFLUENCES ON AERONAUTICS

FROM TEDDY F. WALKOWICZ, '41:

In the February, 1958, issue of *The Review*, J. L. B. Blizard presents an interesting discussion of "Invention in Flight." It is soundly concluded that inventions generally come from many lands, and that it is still an open issue whether the free world, or the collective world, will reap the greatest benefits of their assembled talents [in the field of aeronautics].

It is unfortunate that Dr. Blizard does not argue and support this thesis more strongly. True enough, the comparison of flight in nature with flight by man has many interesting aspects. However, quite apart from the more obvious technical oversimplifications (for example, those in Table I on page 205 and the statement on page 216 that: "The rocket engine is the only one which will operate above 50,000 feet), one can take serious issue with the main point; that progress in man's flight has been impeded largely by a lack of free flow of communication.

For example, more rapid progress in the helicopter field has been impeded by very difficult problems in dynamics and structural fatigue, and still waits for the advent of low-cost, shaft-turbine power plants. Making it sound as if earlier publication of da Vinci's works would have speeded things up appears to be stretching the point, to say the least.

Similarly, however uncommunicative Goddard may have been about his work, the reasons for the 10-year lag between United States and German rocket development are rather more complicated than "unfortunate compartmentalization of American rocket research."

After all, we were all told by Dr. Bush in *Modern Arms and Free Men* in 1949 that a free society was bound to stay ahead in science and technology, because there were fewer impediments to communication in a free society than in one as security-conscious as the communist state. Yet, as evidenced by the Sputniks, Soviet progress in aeronautics since the end of World War II appears to have been rather more rapid than that of the United States. Why? The reasons are several.

First, as Dr. Blizard asserts, the free flow of communications is of some importance. Here in the United States, this problem has become rather acute during the past five years because of a top-level philosophy on the dissemination of information, which has been unsound both in principle and in practice. However, this problem alone, although serious enough to be a

(Continued on page 380)

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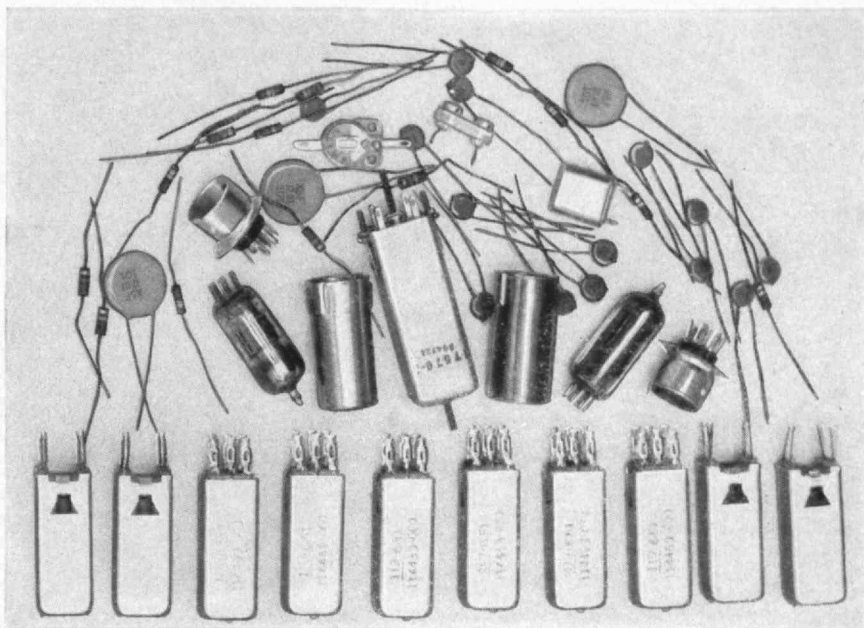
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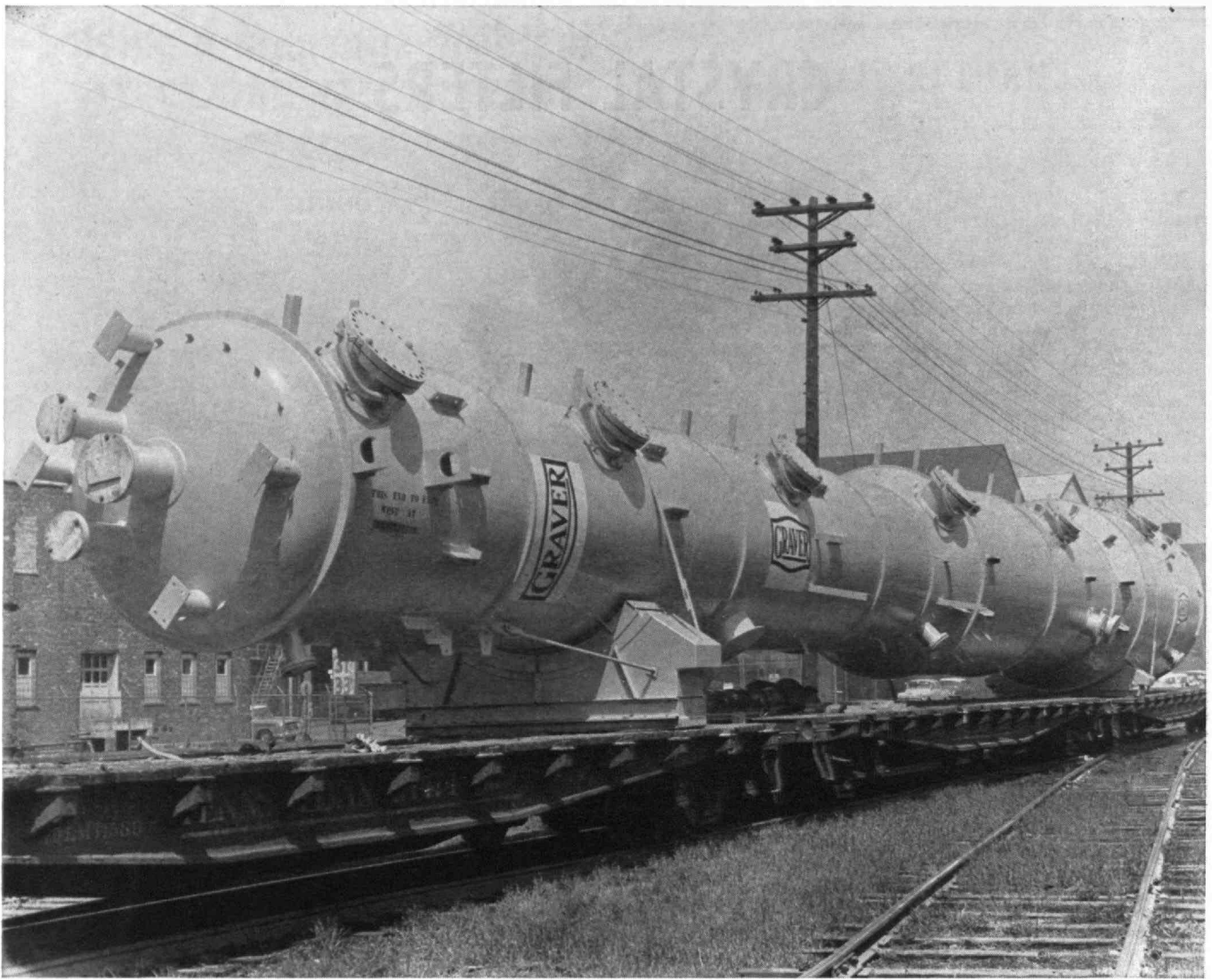
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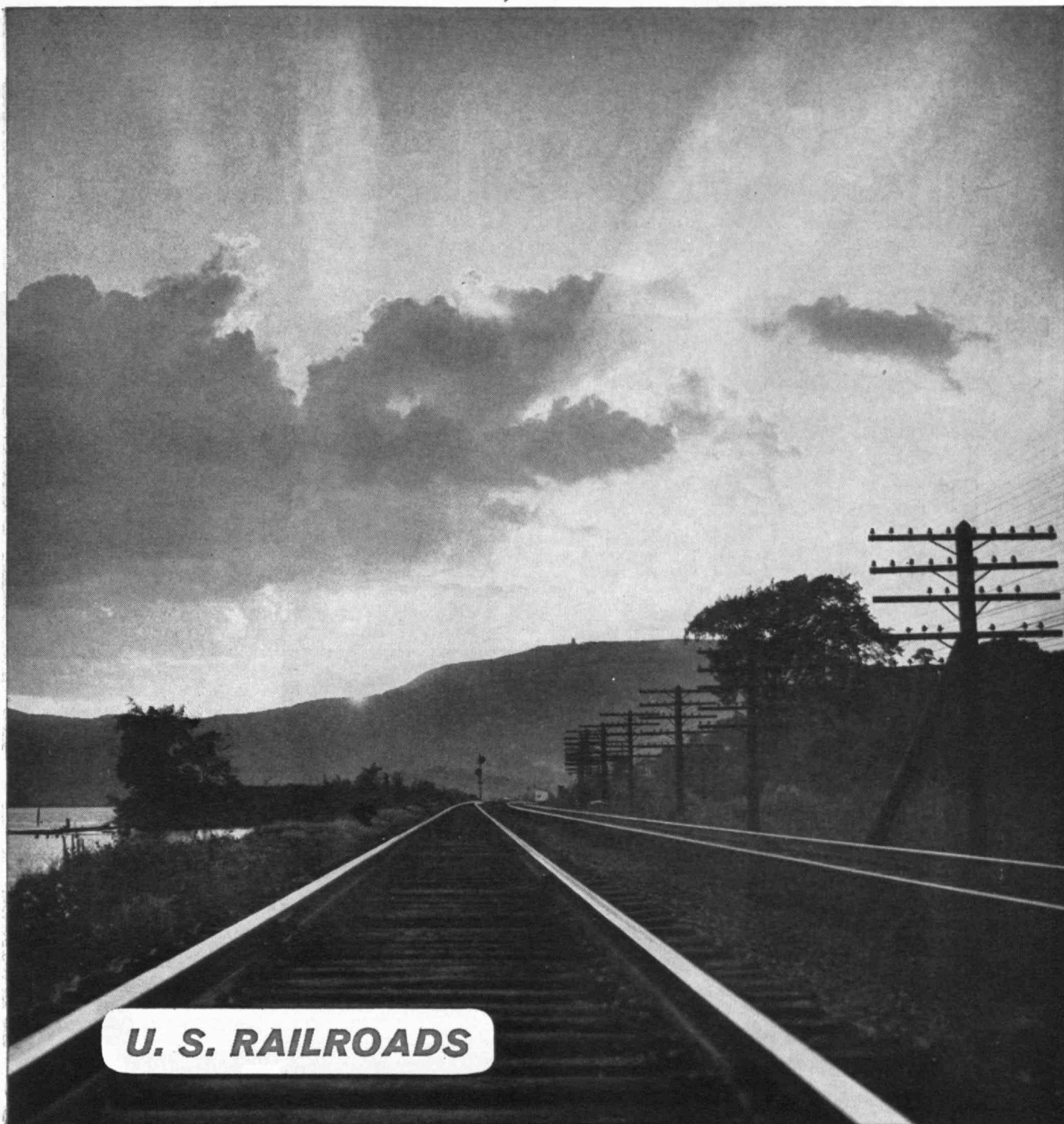
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MAY, 1958

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BELOW — A few of the far-flung projects designed and constructed by Lummus

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High Pressure Acetylene Chemicals Plant, General Aniline & Film Corp.	Calvert City, Kentucky, U.S.A.
Phenol-Acetone Plant, Progil-Electrochimie	Pont de Claix, France
Ethylene Oxide Plant for Petrochemicals Ltd.	Partington, England

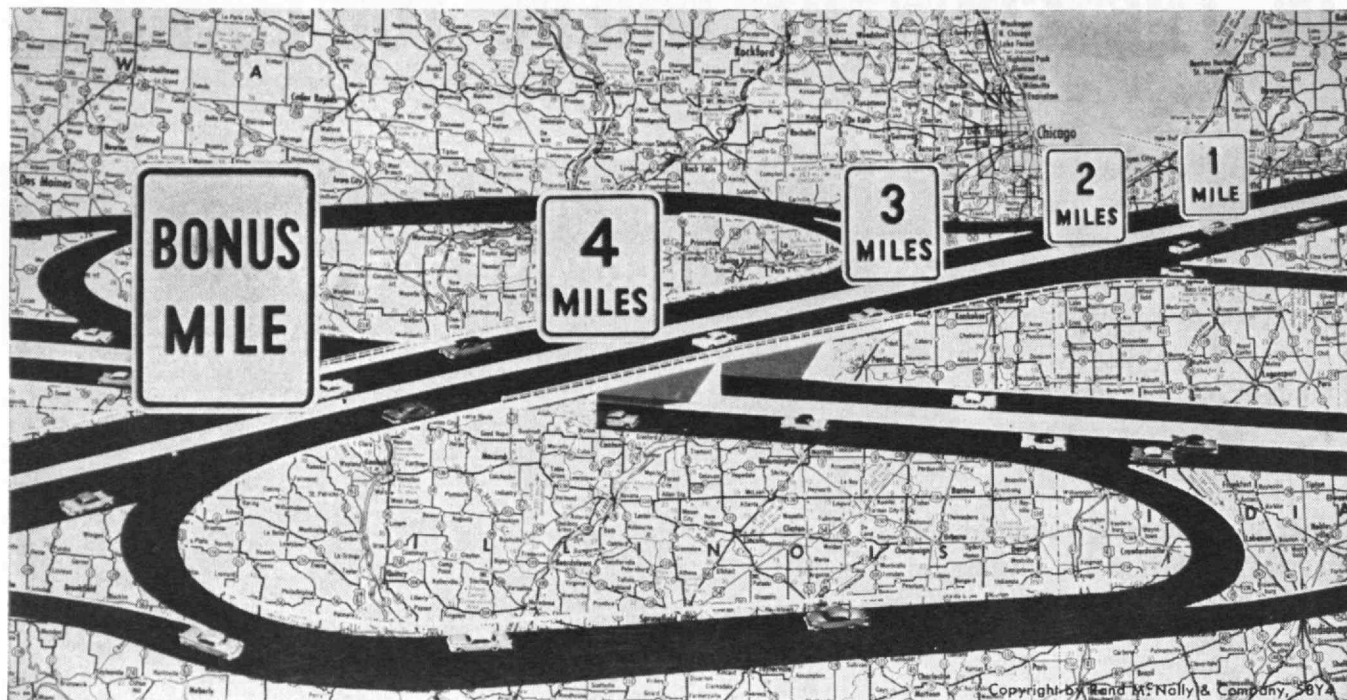
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Compania Shell de Venezuela	Cardon, Venezuela
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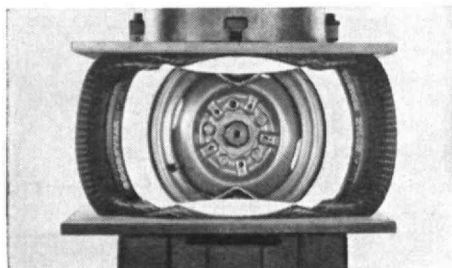


Look for this Goodyear dealer sign for better tire values ... better tire care ... convenient credit terms.

Want a **BONUS MILE** for every 4 you drive? Get the new 3-T Nylon Cord Tire...made a new way!

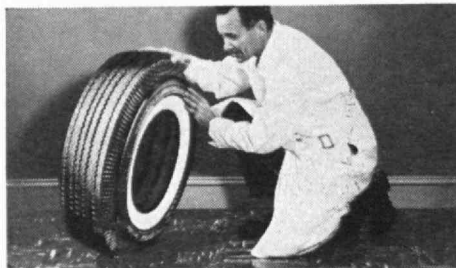


3-T Nylon makes it stronger...new thicker, wider tread plus new pre-shaping process makes it last **26% longer!**



Look! 32,000 lbs. of pressure could not break Goodyear's triple-tough 3-T Nylon Cord. Reason: This nylon cord is triple-tempered under precise *ten-sion*, at closely controlled *tem-perature*, for an exact period of *time*.

Result: A stronger, safer tire for more worry-free miles. See it soon at your Goodyear dealer's.



You can see why you get bonus miles ... the huskier non-skid tread and new traction design. And the tire is "pre-shaped" to its proper inflated size to relieve undesirable tension, pre-fit it for the road.

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THE TECHNOLOGY REVIEW

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Vol. 60, No. 7

WATERFRONT AND NATIVE MARKET AT PORT-AU-PRINCE, HAITI

Front Cover

Photograph by Paul J. Woolf

TRANQUIL COVE, ROCKPORT HARBOR

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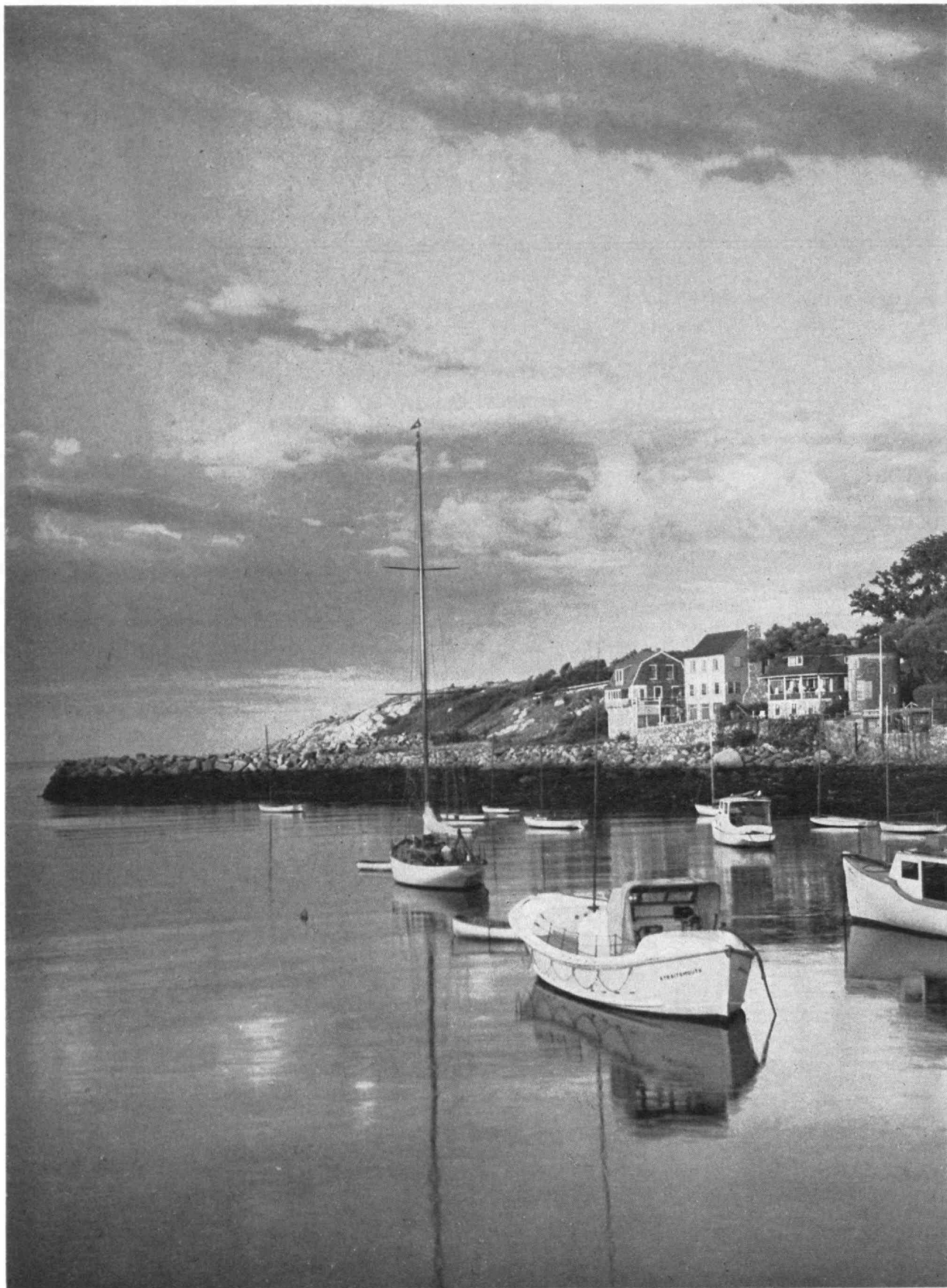
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Round House, Oahu Railway and Land Company, Honolulu, Hawaii

Photograph by
C. E. Patch, '02



Raymond E. Hanson, '03

Tranquil Cove

Permanently captured in this photograph of Rockport Harbor is the serene calm at the end of a day well-spent, fittingly expressed in Alfred, Lord Tennyson's lines, "Twilight and evening bell, and after that the dark."

The Technology Review



VOL. 60, NO. 7

MAY, 1958

The Trend of Affairs

M.I.T. Increases Tuition

■ In a letter dated March 18, addressed to all M.I.T. students, as well as to the parents or guardians of undergraduate students, J. A. Stratton, '23, Acting President, announced an increase in tuition from \$1,100 to \$1,300 per academic year. This increase was authorized by the Corporation, at its last meeting on March 3, and the increase will become effective with the beginning of the fall semester in 1958.

The increase has become necessary, said Dr. Stratton, because of steadily rising costs of operating an educational institution. Last year the Institute incurred a deficit of a quarter of a million dollars; without relief, this deficit may be expected to rise to approximately \$900,000 in another year.

Members of the Corporation and the Administration are anxious that no student now enrolled shall find it necessary to leave the Institute for financial reasons related to the current rise in tuition. Increases in scholarship aid, increased use of the Technology Loan Fund, and initiation of a plan of installment payments of tuition are planned to assist students to meet the increased costs of education. Even with the present increase, tuition meets less than half the cost of education at the Institute, said Dr. Stratton. In his letter to students, Dr. Stratton wrote:

We are keenly aware that the cost of an M.I.T. education constitutes for many students and their families a financial burden of major proportion. We think it proper that those who can do so should pay a fair share of the actual cost of their education. However, it is our desire to assist in every possible way those who lack the immediate financial resources. Accordingly we shall make substantial adjustments in scholarship aid and in the funds available for loans. It is our firm intent that no student presently enrolled shall find it necessary to leave the Institute for financial reasons related to the forthcoming increase.

The decision to increase tuition has been forced upon us by the steadily mounting costs of operating an educational institution such as M.I.T. Even at the new rate the student will contribute considerably less than half of the actual cost to the Institute of his education. As a consequence the Institute incurred last year a deficit of the order of a quarter of a million dollars, and without

some relief in the form of a tuition increase, we anticipate that this would rise to approximately \$900,000 at the end of another year. These are the hard facts which have made our difficult decision inescapable.

To alleviate the immediate impact of the tuition change upon our students, the total scholarship aid for undergraduates and graduate students will be increased more than 20 per cent by drawing upon such limited funds as are available for this purpose. At the same time every effort is being made to secure additional outside scholarship support to replenish and augment these funds.

The Technology Loan Fund this year has lent over \$450,000 without any collateral other than confidence in the character of our students. Next year the funds available for loans will be increased by nearly 50 per cent to help meet the increased costs. Any student in good academic standing whose financial planning appropriately provides for payments of the costs of his education after graduation may draw upon this source for direct assistance. Loans may be granted up to the amount of full tuition each year, payable after graduation. Our first priority will be toward those students who will require assistance to meet the increase in tuition. For the first time we shall begin to make the Fund available to entering freshmen.

We shall continue our efforts to find convenient part-time employment in the M.I.T. dining halls, dormitories, laboratories, libraries and elsewhere on campus for those students desiring such work. The Placement Office is making a concerted effort to assist students in finding summer employment.

The Institute recognizes that the payment of tuition in a large lump sum at the beginning of each term may present a serious problem to many students. To ease this burden we shall institute a plan of installment payments for all or any part of the total fees — both tuition and dormitory charges — that may be incurred by a student during his residence. Payments may be made either by mail or in person on a monthly basis, or according to whatever plan best fits individual needs, without interest or carrying charges. However, we require that all payments be completed by the end of each academic year.

We had hoped that the proposed increase could be deferred for another year. This has proved impossible and we have reluctantly recognized the necessity of going ahead with the change this coming fall. However, it is my sincere belief that these other steps taken concurrently will insure the successful completion of your education.

New Corporation Member

■ A new life member of the Institute's Corporation is George M. Humphrey, steel corporation executive, who was born in Cheboygan, Mich., on March 8, 1890. The son of a prominent member of the Michigan bar, Mr. Humphrey received a public school education at Saginaw, Mich., and later entered the University of Michigan from which he was graduated in 1912 with an LL.B. degree.

After graduation, he was admitted to the bar in Michigan and practiced law in Saginaw with Humphrey, Grant and Humphrey until 1918, when he entered the service of the M. A. Hanna Company in Cleveland as general attorney. He became executive vice-president of this firm in 1924 and president in 1929. Mr. Humphrey served as chairman of the Board of M. A. Hanna Company from May, 1952, until his appointment as Secretary of the U.S. Treasury under President Eisenhower, when he resigned all of his corporate offices.

At present Mr. Humphrey is honorary chairman of the board and director of the M. A. Hanna Company. He also serves as chairman of the Board of National Steel Corporation, and is a director of Canada and Dominion Sugar Company, Ltd., and of the Pittsburgh Consolidation Coal Company.

Named "Man-of-the-Year for 1957" by the National Association of Manufacturers, in that year *Forbes Magazine* also recognized Mr. Humphrey as one of the "Fifty Foremost Business Leaders." He has been the recipient of honorary degrees from 14 colleges and universities.



Frank Turgeon, Jr., F.R.P.S.

George M. Humphrey

... life member of the M.I.T. Corporation. Mr. Humphrey is honorary chairman of the board and director of the M. A. Hanna Company of Cleveland.

Olive Barnard Room

■ Spontaneity marked the acceptance of a plan for the establishment of an Olive Barnard Memorial. Miss Barnard, who died on August 28, 1957, joined the Department of Business and Engineering Administration in 1919 and had been an administrative assistant for more than 25 years. Her air of serenity, coupled with a profound humor, for which she was loved and respected, formed the basis for an unusually understanding relationship with Course XV students in the School of Industrial Management.

William L. Stewart, Jr. and Hugh S. Ferguson, graduates of Course XV in the Class of 1923, are co-chairmen of the Committee for the Olive Barnard Memorial. This committee sought a memorial that would be tangible and continuing, one that would meet a serious need of the School, one which would be dedicated primarily to the students, and one appropriate to the life purposes of a great counselor.

Therefore, to provide such a memorial in Miss Barnard's name, it was proposed to convert the lobby of the Sloan Building into both a student lounge and a "special functions" room. Adjoining this will be an Alumni Office and Alumni Secretary for the School of Industrial Management, who will also add an element of personal welcome to visitors in the School's lobby. Miss Barbara Doyle joined the School in this capacity in February, and is presently situated in Miss Barnard's former office. She brings to this new office a broad background in administration and personnel

work, both in department stores (New York and Boston) and in technical research and development at the M.I.T. Lincoln Laboratory.

Miss Barnard was an educator in the highest sense. Although her influence on graduate students was profound, her major concern was the students who come here as youths and leave as men. Miss Barnard believed in putting first things first and thought in terms of needs rather than in terms of luxuries. The committee hopes that the memorial may be concerned with those things that were Miss Barnard's chief concerns: with the passage through life which each of us makes; with whether we are successes in the large sense rather than merely in a monetary way; with what is best in the concept of "counseling."

The conversion of the lobby of the Sloan Building into the Olive Barnard Room and an Alumni Secretary's Office, as worked out in tentative form by the architect is estimated to cost in excess of \$50,000. Basic plans for the project call for a well-carpeted area furnished with comfortable chairs and settees, adequate lighting, and additional facilities to allow either the serving of dinner to 80 guests or the holding of meetings for about 150 people. The Barnard Memorial will provide space for many kinds of student activities, especially professional association meetings.

The extent of the memorial is dependent on the money received. No "drive" for subscriptions is contemplated. Contributions made payable to "M.I.T.: Barnard Fund" may be sent to the Olive Barnard Memorial Committee, Room 52-456, M.I.T.

Vitamin C and Wounds

■ Vitamin C, the citrus fruit vitamin, holds a mysterious key to the rapid healing of wounds, according to Bernard S. Gould, '32, Associate Professor of Biochemistry at the Institute.

Earlier studies by Dr. Gould and others have proved that animals deprived of vitamin C cannot heal wounds and that there is a direct relationship between the amount of vitamin C in the tissues and the ability to heal wounds. But until now no one knew whether vitamin C acted directly in the healing process or whether it mediated hormonal or other mechanisms that controlled the healing process.

"Now," says Professor Gould, "it is clear that vitamin C is specific and that it acts directly at the site of healing. It is the necessary agent that makes possible the very rapid production of the fibrous network (collagen) which is the basis of the healing process."

According to Dr. Gould, the production of collagen in wound healing and in early growth proceeds at a rate enormously accelerated compared to the extremely slow rate encountered once the individual reaches maturity. Indeed, more than one mechanism may be involved — one, dependent upon vitamin C, during early rapid growth and in wound healing and another, perhaps relatively independent of vitamin C, for the maintenance of body collagen.

It has also been shown that vitamin C is required for the maintenance of newly healed tissue and appears to be essential for a considerable time after apparent healing. Having found that vitamin C itself is specific for the healing process and acts chiefly at the site of healing, Dr. Gould points out, the problem now is to discover the mechanism by which vitamin C becomes effective.

Dr. Gould's work is supported by a grant from the National Institutes of Health, U.S. Public Health Service.

Film on Food Technology

■ The Department of Food Technology at the Institute recently has produced a new film called "New Horizons in Food Technology," directed primarily toward high school science students to interest these students in careers in the largest single industry, the fabulous food industry — an industry which amounts to well over 26 per cent of the nation's economy.

In this age when many people, both young and old alike, are imbued with the importance of Sputnik, the nuclear age, and the engineering sciences, one forgets the very basis upon which one is existing, namely, that of food.

The food industry is not only the largest single industry in this country today but it is the most stable and ever increasing, due to the increase in our population and due to the increase of our standard of living, and also the American housewife's desire for convenience.

This industry is in need of scientists well trained in food technology, and the film which has been produced by the M.I.T. Department of Food Technology is available for showing to interested high schools and to science organizations.

On the Horizon

June 16, 1958 — 24th Alumni Day, 1958, M.I.T., Campus in Cambridge.

November 8, 1958 — 13th M.I.T. Alumni Regional Conference, Albuquerque, N.M.

Regatta on Onondaga

■ The M.I.T. Crew will journey to Syracuse on June 21 as one of the participants from 13 colleges and universities to row in the annual Intercollegiate Rowing Association Regatta on Lake Onondaga, near Syracuse. This event, formerly called the Poughkeepsie Regatta, when it was held on the Hudson River, will schedule three races — for the varsity, junior varsity, and freshmen.

Probable entrants in this year's I.R.A. Regatta are: Boston University, California, Columbia, Cornell, Dartmouth, M.I.T., Navy, Pennsylvania, Princeton, Rutgers, Stanford, Syracuse, and Wisconsin. All except California participated last June when an estimated 11,000 persons witnessed the regatta.

Competition in this year's regatta is expected to be the keenest in years, since the Cornell varsity eight that dominated the feature three-mile race for the past three years has been depleted by graduation.

Tickets are on sale, and further information may be obtained, through the M.I.T. Athletic Department and the Syracuse Regatta Association Headquarters, Syracuse University Athletic Department, Syracuse 10, N.Y. Space for alumni tent reunions will be available, according to the regatta officials.

Housing Official Lectures

■ Yngve Larsson of Sweden, Dean of European housing and planning officials, came to the Institute as visiting lecturer for a week in April. A former member of both the Swedish parliament and the Stockholm city council, Dr. Larsson participated in lectures and seminars in M.I.T.'s Department of City and Regional Planning.

Dr. Larsson is the first distinguished visitor to be brought to M.I.T. through the Robert D. Kohn Fund whose establishment was announced on April 3 by Professor Pietro Belluschi, Dean of the School of Architecture and Planning. Donor of the Kohn Fund, said Dean Belluschi, is Civic Films, Inc., a nonprofit corporation whose president is Clarence S. Stein, world-famous architect and planner.

In large part Dr. Larsson has been responsible for the basic policy of Stockholm's development, according to Professor John T. Howard, '35, Head of the Department of City and Regional Planning at M.I.T. And in planning and housing circles, Professor Howard pointed out, Stockholm is considered one of the leading cities of the world in the quality and scale of its planning.

Dr. Larsson has been a part of the Stockholm city government for 40 years and has held a variety of important posts, including chairmanship of the Housing Department and the Housing Commission.

Individuals Noteworthy

■ Prominent in the spring news were 33 promotions, elections, or appointments as set forth below:

Clarence D. Howe, '07, as Chancellor, Dalhousie University, Halifax, Nova Scotia . . . *Francis W. Sears*, '20, and *Sanborn C. Brown*, '44, respectively, as President and as Treasurer, American Association of Physics Teachers . . .

Bryant Essick, '22, as a Trustee, Occidental College . . . *Peter C. Dirksen*, '24, as Vice-president and General Manager, New Bedford Gas and Edison Light Company . . . *Sargent D. Heath*, '24, as a Director and Corporation Clerk, Washburn Company, Worcester, Mass. . . .

Francis E. Manley, '24, as Vice-president, Orange and Rockland Utilities, Inc., Nyack, N.Y. . . . *Samuel B. Smith*, '24, and *Thaddeus L. Sharkey*, '28, respectively, as Consulting Engineer and as Assistant Manager, Rate Department, Ebasco Services, Inc. . . .

Kenneth G. Garside, '29, as Director of Operations, National Cranberry Association . . . *Wade H. Shorter, Jr.*, '29, and *John W. Murray*, '48, respectively, as Vice-president and as Manager, Research, Development, and Engineering Operations, Emhart Manufacturing Company, Hartford, Conn. . . .

George T. Logan, '29, as Statistician, Philadelphia Electric Company . . . *Allen Latham, Jr.*, '30, and *Joseph J. Snyder*, '44, as Directors, Arthur D. Little, Inc. . . .

Howard T. Orville, '30, as Vice-president, Beckman and Whitley, Inc., San Carlos, Calif. . . . *Willard B. Paine*, '30, as President and Chief Executive Officer, Bendix-Westinghouse Automotive Air Brake Company . . . *Rear Admiral Schuyler N. Pyne*, '30, as Commanding Officer, Brooklyn Navy Yard . . .

Otway W. Rash, '34, as Regional Vice-president, Carling Brewing Company . . . *Maxwell D. Millard*, '33, as Administrative Vice-president, International and Raw Materials Department, United States Steel Corporation . . . *Anthony N. Mooradian*, '34, as President, Tritex Mills . . .

Ralph G. Adams, Jr., '38, as Chief Engineer, General Products Engineering Department, Bendix Aviation Corporation . . . *Philip V. Darling*, '40, as Planning Director, City of Baltimore . . . *David S. McNally*, '41, as Vice-president and General Manager, Kleinschmidt Laboratories, Inc., Deerfield, Ill. . . .

Neil Burgess, Jr., '41, and *R. Dixon Speas*, '40, respectively, as Vice-president and as Treasurer; and *Luis de Florez*, '11, *Rear Admiral Calvin M. Bolster*, '23, *Fred N. Dickerman*, '30, and *Teddy F. Walkowicz*, '41, as members of the Council, Institute of the Aeronautical Sciences . . .

Colonel Richard C. Gibson, '42, as Deputy Chief for Operations, Air Force Missile Development Center, Holloman Air Force Base, N.M. . . . *William R. Lindsay*, '46, as Production Manager, Louisville Courier-Journal and Times, Louisville, Ky. . . . *Jack J. Jackson*, '50, as Comptroller and Branch Comptroller, respectively, Safeguard Insurance Company and the London and Lancashire Insurance Company, Ltd.

■ Special honors recently announced or awarded to Alumni include:

To *Fred H. Daniels*, '11, the Isaiah Thomas Award, by the Advertising Club of Worcester, Mass. . . . to *J. Warren Horton*, '14, the Distinguished Civilian Service Award, by the United States Navy Department . . .

To *Lawrence H. Flett*, '18, its 1958 Gold Medal for "his research achievements, his devotion to the profession of chemistry, and his long and unselfish promotion of the professional welfare of fellow chemists through the medium of scientific societies," by the American Institute of Chemists . . . to *James R. Killian, Jr.*, '26, an honorary doctorate of applied science, by the University of Montreal . . .

To *Bernard M. Gordon*, '48, named as one of nine "Outstanding Young Men of Greater Boston" for 1957, by the Greater Boston Junior Chamber of Commerce . . . to *Richard T. J. Charles*, '54, the 1958 Rossiter W. Raymond Award, by the American Institute of Mining, Metallurgical, and Petroleum Engineers.

Beach Erosion

■ When the characteristics of the sediments comprising natural beaches are examined, in most cases it is found that there is a distinct banding of properties in a direction parallel to the beach. The property showing the sharpest segregation is that of particle diameter. Field samples taken from the surf zone show a large variation in particle size while those taken offshore of the surf zone show a regular decrease of medium particle size as distance in the offshore direction increases.

This observed sorting of sizes was known to be the result of a process of selective onshore-offshore transport, in some manner due to the action of shallow-water waves. It was felt that an understanding of the mechanics of this sorting process would lead to an understanding of the equilibrium characteristics of beaches and the volumetric sand movements indicated by seasonal changes in the pattern of banding.

As an oscillatory wave advances into shoaling water, a depth is reached at which the unsteady motion of fluid particles caused by the wave reaches the bottom. As the depth decreases and the wave steepens shoreward of this point, the displacement and velocity of water particles increase in magnitude. Unsteady fluid motion at the bottom results and produces hydrodynamic forces on the sediment particles comprising the beach.

It is recognized that other wave-induced phenomena such as rip and littoral current, breakers, and bed fluidization can cause local motion of bottom sediments, but the general motion due to wave passage is probably responsible for the observed sorting.

During the past several years the Hydrodynamics Laboratory at M.I.T. has carried out an experimental and analytical study of the mechanics of wave-induced sediment motion, under the sponsorship of the Beach Erosion Board, Corps of Engineers, U.S. Army. The work was performed by *Luis A. Peralta*, '53, and *Robert G. Dean*, research assistants in Civil Engineering, under the direction of *Arthur T. Ippen*, Professor of Hydraulics, and the supervision of *Peter S. Eagleson*, '56, Assistant Professor of Hydraulic Engineering.

Reunion in Cuba

■ On February 21 the Class of 1921 held an unusual reunion in Havana. As these illustrations show, '21 classmates present included (left to right, photograph at right): Mrs. and Mr. George F. B. Owens, Edwin L. Rose, Mrs. Ralph M. Shaw, Jr., Mrs. Edwin L. Rose, Mrs. and Mr. Dugald C. Jackson, Jr., Mr. and Mrs. Philip T. Coffin, Mrs. Carole A. Clarke, Mrs. Robert F. Miller, Carole A. Clarke, Raymond A. St. Laurent, Antonio H. Rodriguez. Shown below are (in reading order): Mrs.



Philip A. Nelles, Jr., Mrs. LeRoy M. Hersum, Mrs. Narciso S. Padilla, LeRoy M. Hersum, Mr. Martinez, Mrs. and Mr. George Schnitzler, Mrs. and Mr. Edouard N. Dubé, Mrs. Clarke, Mr. and Mrs. Harry A. Goodman, Mr. and Mrs. John E. Chibás, '31, Mr. Owens, Mrs. Coffin, Mr. Rodriguez, Robert F. Miller, Mrs. and Mr. Willard A. Emery, Mrs. Miller.

The experimental facilities consisted of a glass-walled channel 100 feet long, 2½ feet wide and 3 feet deep, which contained an artificially roughened, fixed, plane beach of variable slope at one end. Waves were generated at the other end by a horizontally reciprocating piston actuated by a hydraulic servomechanism with continuously variable speed and stroke.

The motions of discrete spherical sediment particles of various size and specific gravity were studied statistically on smooth and roughened surfaces of various slope. Under test conditions a set of wave trains was produced, each composed of a different but uniform series of individual "classical" waves.

Preliminary experiments indicated that the bottom sediment reached an oscillatory or quasi-oscillatory motion when, for some portion of each wave cycle, the sum of the instantaneous forces acting exceeded that value necessary to initiate motion.

The instantaneous hydrodynamic forces are oscillatory in nature. Because of wave asymmetry, their net value (temporal average over one cycle) is always in the onshore direction. Gravity, however, provides a unidirectional offshore force. Thus, the particular characteristics of local sediment, wave, and beach will determine an offshore gravity force and a net onshore hydrodynamic force. Depending upon their relative magnitudes, the forces will lead to onshore, offshore, or no net motion of sediment.

At the point of zero net motion, the particles of sediment are in oscillating equilibrium. A particle in

a position offshore of the point of zero net sediment motion will move offshore under the driving force of gravity. As it moves offshore it moves into a field of continually weaker fluid velocity so that eventually all motion of this particle ceases. The same particle, in a position onshore of the equilibrium point, will move onshore with considerable convective acceleration due to the increasing predominance of hydrodynamic forces.

In the vicinity of the breaker, the onshore motion is more and more opposed by the backrush from the preceding waves and the sediments come to another point of oscillatory equilibrium. Shoreward of this equilibrium position the magnitude of the periodic excursion of a particle increases as the wave period increases, for then the breaker causing the excursion is out of synchronism with the backrush from the preceding wave.

Analytical studies defined the net velocity of sediment in terms of an unknown resistance coefficient and the unknown thickness of, and velocity distribution within, the bottom boundary layer. These quantities were determined from the above-mentioned tests. Utilizing the point of zero net sediment velocity as the criterion for equilibrium of natural beaches, predictions of local equilibrium size-slope characteristics were made in terms of local water depth and the incident deep-water wave. Comparison with available field data yields results which are in excellent agreement.

Twenty-five Years Ago This Month . . .

■ Expansion of the Institute's program of "aerological research" to gain new knowledge of the atmosphere several miles above the earth was assured by a grant from the Rockefeller Foundation. These studies had as one of their first objectives that of gathering data to aid in developing accurate methods of forecasting local weather conditions.



Since November, 1931, the Department of Meteorology had been making daily weather observations to a height of approximately four miles above New England in a specially equipped airplane (see photograph above). These flights had made it possible to secure daily records of upper-air temperature, barometric pressure, and humidity, as well as observations on fog, haze, ice formation, and clouds.* Preliminary data also had been obtained on the bacteria content of the upper air and on the distribution of pollen and spores of plant diseases.

■ Congratulations were being extended to *George W. Fuller*, '90, upon his being named chairman of the Engineering Foundation; . . . to *Arthur W. Dean*, '92, newly elected President of the Boston Society of Civil Engineers; . . . to *Lewis W. Douglas*, '17, appointed Director of the Budget by the newly inaugurated President, Franklin D. Roosevelt; . . .

And to *Davis R. Dewey*, Head of the Institute's Department of Economics, for being one of 20 economists to sign an open letter to Mr. Roosevelt urging settlement of the war debts, lowering tariff barriers by reciprocal action, and maintenance of the gold standard as a minimum program for economic recovery. Lower tariffs on manufactured goods were recommended in order to admit additional imports of "diversified manufactures to take out our own agricultural and raw material exports, which," it was felt, "would stimulate prices, purchasing power, and employment." America should encourage and facilitate the prompt restoration of the gold standard abroad, which settlement of interallied debts and tariff reduction would do. World stocks of gold, the letter said, were held to be adequate for all credit needs.

*Observations made March 29, 1933, at altitude 19,300 feet indicated a temperature of *minus* 36.5 degrees F. contrasted with a ground reading of 38 degrees F. above, a range of 74.5 degrees F.

Visiting Committee Report on Library

■ The Visiting Committee on Library* met in the Charles Hayden Memorial Library on December 7, 1957, in the office of William N. Locke, Director of M.I.T. Libraries. Committee members present were: Messrs. Clapp, Henkle, Metcalf, and Chairman Ryer. Professor Locke and Carl F. Floe, '35, Vice-Chancellor of the Institute, met with the Committee.

The accomplishments of the last two years were reviewed. These included improved compensation to Library staff members, a means of materially reducing book losses, establishment of the new "Serials and Journals of the M.I.T. Libraries," a more satisfactory method of supervising student help, staff changes resulting in improved service, and certain physical changes resulting in more efficient use of library space.

Among current problems discussed was the increasing number of requests for library service from industry in the Boston and Cambridge areas. The Committee recommended that Professor Locke study this matter with a view to determining whether some fee might be imposed for service rendered. The advisability of the inauguration of a full-scale industrial reference service had been previously examined, and this study resulted in a recommendation, by the Committee, that such a policy should not be initiated at this time.

The Committee discussed at some length the matter of book selection. It was recognized that it would be very difficult to formulate an acquisition policy, but it was suggested that a few rules be drawn up for guidance of Faculty and Library staff in making purchases of new acquisitions.

After luncheon at Walker Memorial, the Committee considered the future requirements of the Library. It was pointed out that the Dewey Library would soon require more space. As a first step in meeting this need, the Committee recommended that a careful study be made of the possible rearrangement of existing facilities to make better use of the space now available.

Professor Locke described a proposal for a library of Russian Science and Engineering. The purpose of such a library would be to examine and possibly abstract Russian publications on scientific and engineering research and development with a staff of experts in Russian and in science. This is a program which no library in this country now provides. The consummation of the plan would depend on the financial support obtainable from sources other than M.I.T. It was the opinion of the Committee that such a library, under the management or sponsorship of M.I.T., would be of considerable value to the Institute.

It was the feeling of the members of the Visiting Committee present at the meeting that the M.I.T. Libraries were being progressively administered, both as to the present needs of the Institute community and as to its requirements in the foreseeable future.

*Members of this Committee for 1957-1958 are: Edwin D. Ryer, '20, chairman, John W. Barriger, 3d, '21, Luis A. Ferré, '24, Adam K. Stricker, '29, Verner W. Clapp, Theodore P. Ferris, Herman H. Henkle, and Keyes D. Metcalf.

Visiting Committee Report on Architecture

■ The members of the Visiting Committee on the Department of Architecture* held a meeting in the quarters of the Department on the morning of December 3, 1957. Luncheon at the Faculty Club was attended by most of the members of the Department, as well as by the Committee. Following luncheon, several members of the Committee returned to the Department for individual conferences, with members of the departmental staff.

Considerable discussion was given to the proposed establishment of a structural model laboratory. Professor Lawrence B. Anderson, '30, Head of the Department of Architecture, and Paul Weidlinger, lecturer, stated the purpose of the laboratory, and pointed out the increasing need for such facilities, as structural engineering problems steadily depart from traditional and well-known problems, and become research problems of minor, or even major complexity

* Members of this Committee for 1957-1958 are: Thomas C. Desmond, '09, chairman, James M. Barker, '07, Samuel A. Marx, '07, Ieoh M. Pei, '40, William A. Coolidge, Alden B. Dow, O'Neil Ford, Catherine B. Wurster, and Minoru Yamasaki.

in applied mechanics. Unfortunately, advanced structural engineering is no longer a field of competence for even a well-trained consulting structural engineer. Research investigators have little inclination to work on such problems since they are not usually of fundamental importance in applied mechanics, and frequently require laborious and complex computations and the application of advanced techniques of analysis.

To counteract this trend, which admittedly exists, the Committee investigated two possible solutions: (1) to provide more thorough training of architectural students in structural engineering; and (2) to recapture and focus attention of outstanding structural and research engineers to the major structural problems of contemporary architecture.

It was pointed out that a structural model laboratory would help to accomplish the first objective by providing answers to specific problems by means of experimental stress analysis. The application of model techniques has been used successfully for a number of years in Europe. A structural model laboratory would attract the type of engineers and scientists on whom the architectural profession must depend, and would make valuable contributions in

Alumni Fund Scholarship Dinner

■ Freshmen and sophomores who have received Alumni Fund Scholarships, either this year or last year, were invited to attend an Alumni Fund Scholarship dinner with members of the Alumni Fund Board and other Fund workers on Monday, March 17. The dinner was held in the Campus Room of the Graduate House, and more than 40 students attended.

An informal program was planned for the evening. Dwight C. Arnold, '27, chairman of the Alumni Fund Board, spoke briefly on the purpose and establishment of the Fund. Mr. Arnold also disclosed that the Alumni Fund is now assisting approximately 50 young men by means of scholarships, and that the Alumni Fund National Scholarships are awarded for the full four-year period.

Major event of the evening was a talk by Nicholas J. Grant, '44, Professor of Metallurgy, who spoke on a visit to Russia he had made last fall and showed several dozen slides of his trip.

Among those who attended this meeting were (left to right, upper illustration): W. M. Shaw, '61, M. E. Stone, '61, G. S. Stivers, '60, J. T. Rule, '21, Dean of Students; and (left to right, lower photograph): T. P. Pitre, Director of Student Aid, C. S. Tedmon, Jr., '61, D. C. Dunn, '61 (Freshman Class President), R. L. Johnsen, Jr., '61, A. T. Anderson, 3d, '61, D. C. Arnold, '27, chairman, Fund Board.

M.I.T. Photos



research and education in architecture. M.I.T. would be a logical place for such a laboratory.

Beginning in September, 1957, the Department of Architecture has offered a new elective, the Visual Arts. Albert Bush-Brown, Assistant Professor of Architectural History, explained how the History and Criticism courses introduce students to architecture, painting, and sculpture through illustrated lectures, group conferences, and museum trips. The first half of the course is focused upon the Renaissance in Italy; the second, upon the last 100 years. Robert O. Preusser, Assistant Professor of Visual Design, spoke about creative participation in art and how his Studio course was designed to encourage greater comprehension of the visual arts. Formulation of this Studio course presented a challenge: to make it meaningful to students who have not had previous art experience, who do not intend to become professional artists, and who represent a wide range of scientific and engineering professional interests.

Pietro Belluschi, Dean of the School of Architecture and Planning, described the need for a landscape architect to be available to students for seminars and criticism in an area of present weakness.

Eduardo F. Catalano, Professor of Architecture, and Ernest N. Gelotte, '23, Associate Professor of Construction, were also present during most of the meeting and made valuable contributions to the discussions. The Committee briefly visited the studios and was shown slides and models of student work and visual aid methods by Gyorgy Kepes, Professor of Visual Design, and Richard Filipowski, Associate Professor of Visual Design.

The Visiting Committee report on the Department of Architecture was received for publication in *The Review* on March 17, 1958.

Meeting No. 330

■ The 330th meeting of the Alumni Council of the M.I.T. Alumni Association was opened by Executive Committee member, Vincent T. Estabrook, '36, at 7:40 P.M. on Monday, March 31. Attending this meeting, held at the M.I.T. Faculty Club, were 135 members and guests of the Association, including an unusually large number of past presidents of the Council, many of whom were seated at the head table.

Orders of business included approval of minutes of the previous meeting, and acceptance of the report by Donald P. Severance, '38, Secretary, announcing change in class affiliation of one Alumnus. In addition, Mr. Severance reported that between November 8 and March 27, ten M.I.T. clubs in the loop formed by Tampa, Mexico City, San Francisco, and Hartford had been visited by 19 members of the Institute family. Twelve representatives from the Boston area attended the Regional Meeting in Washington, D.C. on March 1.

It was reported that contributions to the 1958 Alumni Fund had been made by 10,318 Alumni, as of March 28, which is 300 more than last year at the same time. This year's Fund, totaling \$330,000, was almost \$47,000 ahead of the Fund last year at the corresponding time of the year. Joseph E. Conrad, Regional Director of the Alumni Fund, was reported as completing his tour of regions whose activity is

expected to be finished by mid-April. As many as 97 per cent of the members of the Alumni Council have contributed to the 1958 Fund, and it is anticipated that complete participation will be achieved by the 331st Council meeting.

After the short business session, Malcolm G. Kispert, '44, Vice-chancellor, and Charles L. Miller, '51, Assistant Professor of Surveying, spoke on recent activities at M.I.T. with which they are closely associated.

With the aid of slides, Mr. Kispert discussed three aspects of the Institute's increase in tuition, next fall, from \$1,100 to \$1,300 per academic year: (1) What are the conditions which made an increase necessary? (2) What is the capacity of students to pay? (3) What modifications in Student Aid will be made to help students meet the increase in tuition?

The Institute's academic budget, as projected into 1959-1960, shows significant planned increases in salaries and wages, which, incidentally, amount to three-quarters of the total academic expenses. Currently it appears that there will be a deficit of \$213,000 for the present fiscal year, which will have to be met from unrestricted funds. Despite the tuition increase, the Administration expects to balance the 1958-1959 budget only through the use of \$500,000 in unrestricted funds; and the projected deficit for the year of 1959-1960 is \$210,000.

There is a general agreement among the private institutions that, if they are to meet their long-range financial problems, tuition must cover a higher proportion of total cost that it has in the past, and at the same time student aid must be greatly augmented to assist students who cannot afford higher tuition rates. There is a very serious problem of implementing this change in philosophy with respect to tuition, since any one institution which tries it alone would be subjecting itself to great financial risk.

Mr. Kispert presented figures showing tuition changes in a number of other private institutions. Many educational institutions have mandatory fees in addition to the tuition, whereas at M.I.T., the tuition is an all-inclusive fee. Another slide showed the relationship, since 1940, between the change in tuition at M.I.T. and the change in average tuition at 11 other private institutions. This was also compared with the disposable personal income after taxes. Between 1940 and 1958, tuition at M.I.T. has not advanced as rapidly as that in other private colleges, nor has it increased as rapidly as the disposable personal income during the same period.

A study of the annual income of the families of the M.I.T. Freshman Class of this past fall (from an analysis sponsored by the Undergraduate Association) showed that the median income is \$8,000 per year and that one-third of M.I.T.'s freshmen come from homes whose annual income is between \$5,000 and \$8,000; another 16 per cent come from families reported to have annual incomes of less than \$5,000.

The starting salaries of S.B. graduates have increased from \$225 to \$475, or 2.11 times, since the end of World War II. During this same period, tuition has increased only 1.8 times, although the new tuition will bring the Institute's tuition to 2.17 times its 1946-1947 level.

(Continued on page 378)

The Role of the Engineer

Preservation of the high mission of the engineering profession becomes of utmost importance as technical education moves toward the scientific and theoretical

by J. A. STRATTON

At the 12th M.I.T. Alumni Regional Conference, held in Washington, D.C., on March 1, the Institute's Acting President delivered the address presented on these pages. The conference, whose topic was "The Outlook for Science in America," presented an opportunity to tell in one short day about a few of the more exciting advances on the several fronts of science and engineering. After preliminary remarks especially suited to the occasion and locale, Dr. Stratton presented his principal remarks in the following words—

WE have been hearing a great deal about science lately. It has been our good fortune that science in this country has now found extraordinarily eloquent spokesmen. Thanks to their efforts there is a growing comprehension of the crucial role of science in our society; of the reasons why it is imperative that the teaching of science in our schools be improved; and why there is the most pressing need for the encouragement of basic research.

Now the true aim of pure science is to know and to understand. Without an understanding of the principles that underlie the raw data of Nature, progress is slow and empirical. But to *know* is not enough. If science is to be more than an academic pastime, men must also *do*. To do—to translate into tangible benefits the advances of science—that is the function of the engineer. Science and engineering together constitute a vast and continuous spectrum of human effort. No one part of that spectrum, from the ultraviolet of basic research to the infrared of manufacture, can flourish or even subsist without the remainder.

It is my impression that in our concern to stimulate science, we may be overlooking and indeed neglecting the role of the engineer. And so it is on his behalf that I should like to make these few remarks. For engineers are not merely the draftsmen and plumbers of science. Our airplanes, our missiles, our great weapons systems, the stupendous growth and development of industrial processes are all the direct products of American engineering.

If, now, the public confuses engineering with science, if the press last month hailed Wernher von Braun as a top "missile scientist," rather than the excellent engineer which he is, the blame must be borne in some measure by the engineering profession itself. It seems to me that engineers have been notably inarticulate in proclaiming the high mission of their profession. One cannot escape the conclusion that, as a group, engineers to some extent are failing

to grasp and to respond to the challenge, the opportunities and the responsibilities that are rightfully theirs. On the one front where engineering meets science, physicists, chemists, and mathematicians have shown themselves seemingly better able to cope with the vastly complex and difficult problems of component and systems development. And on that other front that joins men with machines, one may observe that social scientists are rapidly moving in.

Why is this so, if indeed it is so.

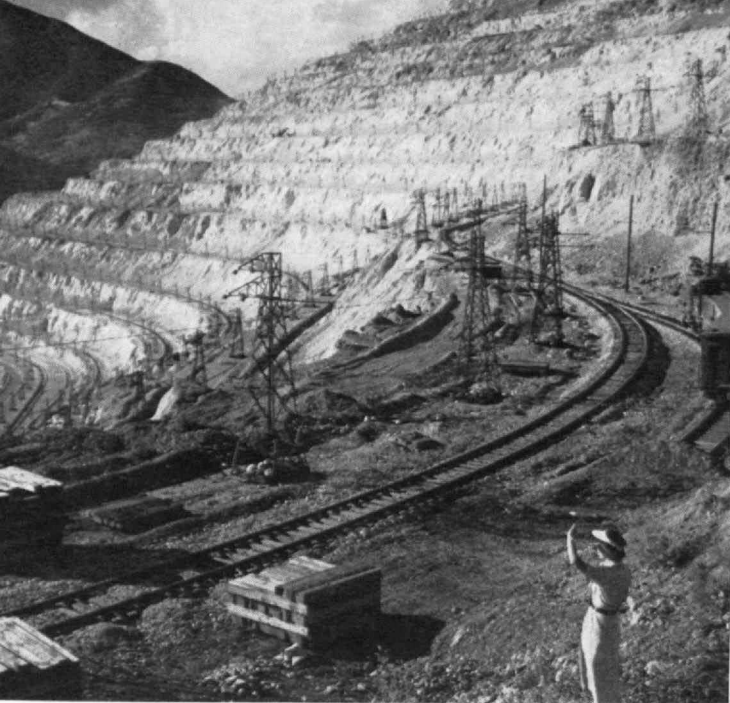
First, consider for a moment the technical origins of our industrial power. This industrial might of the United States has come about because we have achieved the highest rate of productivity per worker, and because we have become a nation of people accustomed to technology.

It is the American engineer who has been the chief architect of this industrial development. But the technology with which he dealt has, until very re-



Ward Allan Howe

The industrial might of the United States has come about because we have achieved a high rate of productivity and because we have become a nation of people accustomed to technology.



Jean Speiser from *Black Star*

It is the American engineer who has been the architect of our industrial development; engineering education can be both liberal and thorough.

cently, rested far more heavily upon the practical arts than upon science per se. Steelmaking, glassmaking, textile manufacture and the whole gamut of our basic industries arose and grew with a minimum of formal technical training on the part of their leaders.

By contrast, today new industries are springing up on every hand — indeed, almost overnight, as a result of some new specific scientific discovery. To my mind, the most significant economic factor of the mid-Twentieth Century lies in this proliferation of totally new products and processes, coupled directly to the forward march of science. Here are the real and healthy roots of a developing economy and a second industrial revolution.

For 100 years, the education and training of the American engineer has been meshed and in tune with the expanding industrial complex.

Suddenly, largely under the impetus of World War II, the whole scene changes. With great skill and perception our industrial and military leaders are learning to capitalize upon discoveries in this wondrous new world of science. The routine work of engineering technology must and will always remain; but day by day — almost hour by hour — are added new tasks which challenge not only the ingenuity but also the intellectual and educational resources of a totally new kind of engineer. The demands upon the engineering profession are soaring ahead; the horizons are lifting and widening.

We need engineers in quantity, as you well know, to maintain the rhythm of the national industry. But where are the men to come from — men with the depth of professional knowledge and the width of view — to deal with these great new tasks.

They will come, of course, as they have in the past from the schools and colleges of engineering throughout the country. And the question that is pressing upon all of us, who are entrusted with the engineer-

ing education of America, is whether we, as educators, have opened our eyes and fully comprehended the great destiny of this profession.

Let it be said to the credit of the engineering institutions that they are clearly awake to the need of a reappraisal. There is scarcely an engineering faculty in the country that is not currently restudying its curriculum, reviewing its aims, revising its methods. Basically the issues are one and the same for every school; if now I seem to speak more particularly for M.I.T., that is because my own responsibilities lie there, and there I see the problems most clearly. To this let me add that the very issues now so hotly debated in the educational world have their counterparts in some of the most perplexing problems of industry and government.

First, may I remind you that engineering is itself many things — a vast domain of many lands. It includes the highly skilled art of the modern technician; it encompasses managerial occupations requiring a consummate knowledge of human behavior; and it has been pushed forward now into areas of systems design, with its array of problems that can be mastered only by the most sophisticated methods of modern science and mathematics.

Every part of this extended domain contains elements essential to the industrial life of the nation. Our great professional societies, such as the institutes of mechanical and electrical engineers, choose to group these activities together in a few large categories. But the fact is that within any one of these traditional branches there is a vast range of professional qualifications. The term “electrical engineer” no longer describes adequately the occupation. Nor can one and the same plan of engineering education be adapted for all.

One of the major criticisms of our lower school system has been the unwillingness to distinguish among students of various aptitudes, ambitions, and intellectual gifts. The professional schools must face the same necessity. I believe that our engineering institutions must begin to redefine their objectives more clearly and design their curricula accordingly. We, too, have our problem of “roles and missions.”

Secondly, the dissolving away of the boundaries which traditionally marked off one domain of engineering from another gives rise to an array of new and perplexing questions. Within, let us say, electrical engineering, the range of activities grows wider and wider. At the same time the electrical field is fusing into the mechanical, and it becomes increasingly difficult to distinguish one profession from the other.

Engineering principles and engineering systems cut boldly across these arbitrary barriers, and professional education — particularly at the undergraduate level — must follow suit.

It becomes increasingly clear that whatever departmental structure we may cling to, we must also find better ways of breaking freely out of this compartmentalization. Almost every institution is experimenting with various devices, such as interdepartmental laboratories, research centers, seminars and the like, as a means of providing new syntheses,

(Concluded on page 372)

UNDERWRITING THE FUTURE STRENGTH OF American Science and Technology

Currently we must give attention to at least five requirements
for augmenting our scholarship and our research effectiveness

by JAMES R. KILLIAN, JR.

I DERIVE deep satisfaction in the opportunity to re-join my M.I.T. colleagues in welcoming our friends and guests to this Regional Conference and in sharing in this discussion of America's future scientific strength. My position and experience here in Washington have reinforced my conviction that M.I.T. is a major component of our nation's scientific resources and progress, and that she bears an immense responsibility to maintain her long-established role of being a pace-setting institution and one of the world's great centers of scientific research and education.

The fact that I could go on leave of absence to accept my present responsibilities here in Washington, and the fact that so many other members of M.I.T.'s Faculty and Administration have been active in public service continues the strong tradition and policy of the Institute that it has an obligation not only to be strong in its program and activities in Cambridge, but to be generous in making its people available when there is a need for their special talents in the public service. When members of its staff, such as myself, enter the public service it throws increased burdens on those who remain in Cambridge. These burdens they have accepted in good spirit and with great competence, and it should be emphasized that those who pick up these extra burdens are also making important contributions to the nation. Our Chancellor and Acting President, J. A. Stratton, '23, is doing a magnificent job in administering both his office as Chancellor and the Office of the President. Under his skilled and steadfast leadership the Institute is experiencing no loss of momentum; in fact, under his able and firm leadership it is moving steadily ahead.

My remarks are directed at the theme of this meeting. In fulfilling this assignment I wish to dwell on the importance of balance and proportion in our national scientific effort. I include technology, as well as science, in my discussion because they are so closely related and interact upon each other in such profoundly important ways.

Let me make my conviction immediately clear that the United States today is scientifically and technologically strong and growing stronger. I do not believe that we have lost our technological leadership, nor that we are predestined to lose it in the future — provided we do not fail to remedy our weaknesses. We have great strength, we have great resources. We also face relentless, able competition that demands of us

poise, high-quality performance, and indefatigable effort.

The first industrial revolution was ushered in by Great Britain. As one of my M.I.T. colleagues has observed, the United States leaped over the first industrial revolution and ushered in the second. Is Russia leapfrogging over the second industrial revolution and moving swiftly toward a third, leaving the United States still preoccupied with the second? It is in the light of this that I discuss our present concerns about the future. The launching of Sputnik and our growing knowledge of the great educational and technological advances in Russia has given many people the idea that the Soviets have achieved a technological superiority over us. In my conviction they have not. In many fields the Soviets have been pushing rapidly ahead, as for example in rocket propulsion, oceanography, theoretical mathematics, space medicine, and certain phases of electronics.

But while this has been taking place, the United States has also been making progress. We continue to be outstandingly strong in nuclear physics, in solid-state physics, in polymer chemistry, and in high-speed calculating machines. In high-energy nuclear physics the Soviets are developing fast and may indeed grow to excel. But in low-energy nuclear physics which is directly related to applications, the outstanding position of the United States is beyond dispute.

What Russian progress has shown is not that leadership has passed from the United States to the U.S.S.R., but that we must expect in the future more examples of Russian challenge to our scientific and technological leadership. Clearly the problem before us is not our leadership in technological strength today; the challenge we face is of the maintenance of this position tomorrow against the challenge of the surging technological revolution occurring in the U.S.S.R. and other countries.

Within our lifetime we have seen how scientific leadership moves from one place to another: in the 1920's and on into the early 30's, a majority of the *fundamental* scientific discoveries were made in Europe, and then there was a shift. In the 1930's and on, the United States became outstanding. After having obtained very few Nobel prizes in science before 1930, the United States has received more than half of those awarded since 1945.

What are some of the things that we must do to maintain our great relative strength in science and

technology? Let me look at some of the requirements for sustaining and augmenting our research effectiveness. We must currently give attention to at least five requirements.

The first of these is the need to make the adjustments in the level of support of research necessary to offset inflation and to meet new needs and opportunities. Administration proposals now before Congress call for a substantial increase in research funds for a number of government agencies and departments. Simply to increase public funds for research, however, is not enough. There must also be an increase in the support provided by private agencies—industry, foundations, and individuals.

Second, we need to stabilize the support of research by both public and private agencies. Starts and stops, *ad hoc* commitments, and modification of research programs have at times kept the national effort off balance, and have occasionally served to dissipate our efforts rather than to augment them.

Third, we seek to achieve a national policy and program for the provision of large scientific instruments, as for example in nuclear physics. Such a national policy and program seems essential if we are to achieve the best distribution of our financial resources. It is recognized that in a number of experimental research fields, our ability to maintain world leadership depends on the availability of new and more powerful research tools. Not only do we need new instruments; we also need to modernize existing research instruments and to find ways to more fully employ machines which we now have.

Are there areas which need more effort and support, as for example, geology, geophysics, meteorology, oceanography, materials research and propulsion? The overlapping or converging areas which involve the participation of more than two sciences are increasing in importance, for example, biophysics and biochemistry, and the application of information theory to neurology and linguistics. There seems to be accumulating evidence that the life sciences are going to be one of the great areas of interest and discovery in the years ahead and warrant increasing attention.

Of course, in pointing out areas which may need more emphasis and support, we must not forget that the direction and course of science is largely determined by the imaginative individual scientist following his own interest and making his own determination of what is most challenging.

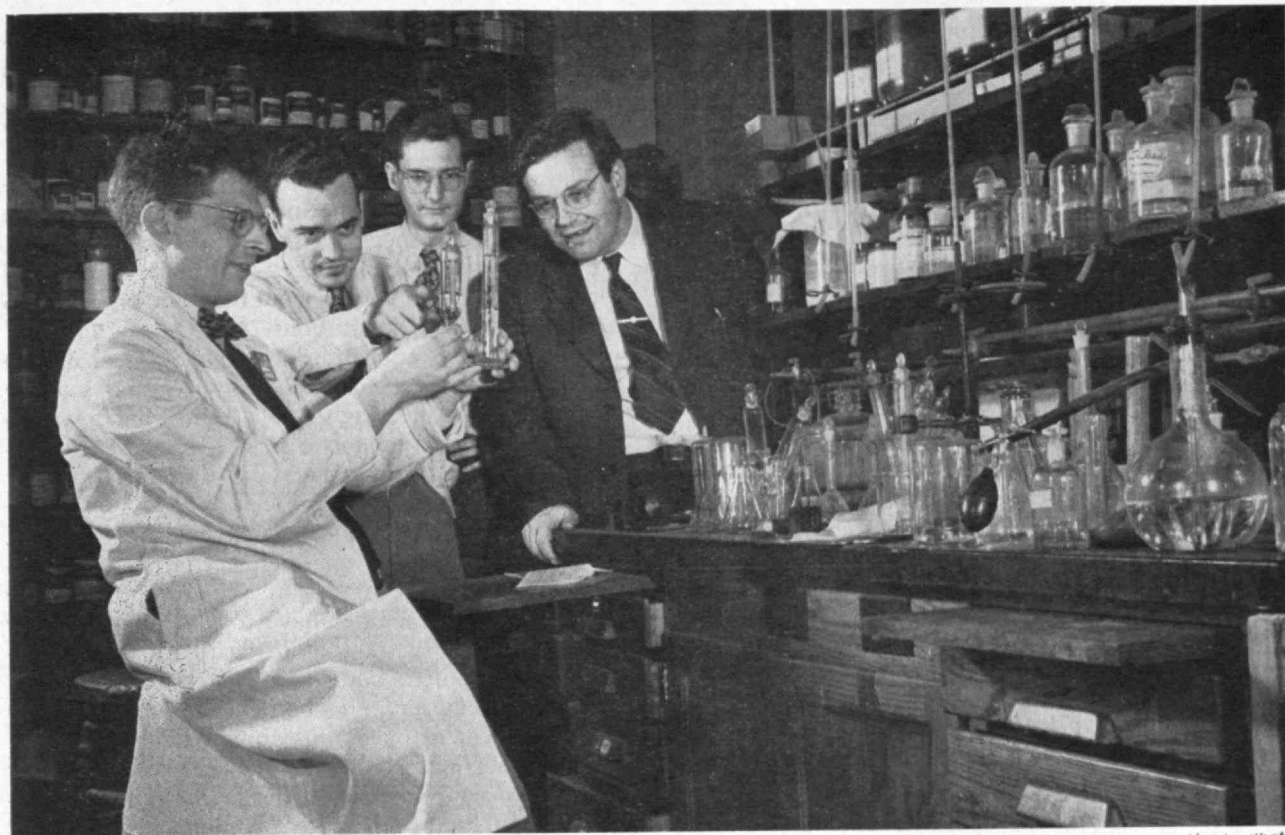
The next area which we must give special attention to, in the period immediately ahead, is our organization pattern for scientific research. We have come to think of basic research as finding its natural home in the university, and indeed the university seems to be the best instrument for conducting basic research. This has not always been true, and we may well be entering a period when other forms of organization will compete with the university in the field of basic research. A few great industrial laboratories have strong basic research programs and an increasing number of government-operated or government-sponsored laboratories conduct basic research as indeed they should and must.

Recognizing that other nonuniversity organizations

have a compelling need to enter the basic research field, we nevertheless need to give careful attention to the over-all pattern of our basic research effort. Research is an essential part of the effort of a university because the education of scientists must be carried on in an atmosphere of research and through their participation in research activities. If basic research moved out of the universities, we would certainly reduce our capacity to educate future scientists. Indeed as James B. Conant has pointed out, every time we remove a scientist doing basic research from a university, we reduce our capability to train future scientists. As we extend our total national program of research, we need to keep clearly in mind the importance of basic research to the educational strength of our universities and make sure that we do not create a pattern which tends, over the long pull, to attract basic research away from the universities.

But we must also recognize that our research needs are going to require special kinds of institutions separate from the universities. This comes about largely because of the magnitude of equipment and facilities required for much of modern research. The great particle accelerators required by nuclear physics are reaching such size and cost that they no longer can be financed by a university or limited in their use to a single institution. This is becoming true in other fields. In a recent report by the National Academy of Sciences Committee on Meteorology on needs for research and education in meteorology, it urged the establishment of a National Institute of Atmospheric Research which could provide the research facilities on a scale required to cope with the global nature of the meteorological problem as described in this report. These facilities would include: "modern scientific and technological tools such as a large-scale, high-speed electronic computer, a meteorological flight squadron, a laboratory for fundamental research on techniques for probing the atmosphere by electromagnetic radiation, and a laboratory for fundamental research on the use of satellites and rockets as probes of the atmosphere." As envisioned, such an institute might be sponsored by a group of universities and would offer opportunities to university scientists and graduate students, but it would be an autonomous institution standing separate from any single educational institution and planned to serve all institutions responsible for research and education in meteorology. Other examples could be cited where we need to find new institutional patterns and relationships to provide research facilities adequate to deal with modern research techniques but too expensive to be confined to a single institution. We must develop the counterparts of the research institutes in Germany and the U.S.S.R., but we must do it by properly relating them to our universities, and thus avoid a serious weakness in the foreign institutes.

It is also increasingly clear that within institutions it is going to be necessary to create groups of a size sufficiently large to be effective in achieving an integrated approach to certain complex scientific and technological problems. We need to think of how we can establish institutes within educational institutions which make possible a multiple-discipline attack on a problem. M.I.T. has sought to do this through inter-



M.I.T. photo

The success of engineering education in attracting and holding more first-rate teachers will depend upon accelerating the development of more and stronger graduate programs. The graduate school, and the research associated with it, can provide engineer-teachers with the opportunities for professional activities and growth as engineers which they now find chiefly in practice, outside of educational institutions.

departmental laboratories, as for example the Research Laboratory of Electronics or our Laboratory for Nuclear Science. There re-groupings and consolidations of research activities bring special problems of finance and organization that will require careful attention at the national level in the years ahead. The need for such integrated groups of sufficient size and scope to effectively tackle many of our problems in science and technology should never, however, overshadow the importance of the individual scientist who is working alone or in small groups. He needs to be afforded the opportunity to work in this fashion, and we must find ways to insure him freedom to do so and adequate support. It sometimes proves easier to get support for a project for a large laboratory than it does for the individual scientist working independently with his own graduate students.

In addition to policies affecting basic research, intensive attention must be and is being given to improving the collection and dissemination of scientific, technical, and engineering information.

One of our most immediate tasks is to find mechanisms to make more generally known to the scientific community the availability of information already in hand. While we have problems of collection we have greater problems in distribution. The Librarian of Congress reports that a check of the Library's science receipts, against *Knizhnaia Letopis*, the Soviet national bibliography, indicates that "60 percent of the Soviet materials currently published in the natural sciences and 41 percent of those published in technology are being obtained by the Library. Of the 930

Soviet periodicals (titles) issued in 1950-54, the Library received 501 or 54 percent." The Library of Congress has come to be a great national library of science.

It must be added that there is not enough coverage by the total national translating activity of the significant material being produced by the Soviet bloc. Some 40 Soviet scientific and technical journals are presently being translated: 20 by the federal government and 20 by commercial concerns. In addition, a large number of abstracts of the Soviet literature are being produced in selected technical fields. Translation coverage is particularly inadequate in the fields of biology, physics, geophysics, electronics, and the earth sciences.

As efforts are being made to improve government procedures and efforts in the collection and dissemination of technical information, we need at the same time to give attention to nongovernmental services. We need to find a way to increase the support of numerous United States scientific journals so as to expedite the publication of scientific papers. The situation is such that considerable delays attach to the publication of scientific papers.

Next, we must encourage and provide for the study of the Russian language by increasing numbers of American students. Not only do we need more people who can do the translating that we need; we also need more scientists who can read Soviet scientific publications for their own benefit. A recent estimate indicates that of all the items now published in the field of science in the world, about half are published in

English. The next largest number are published in Russian.

In the field of education there are many improvements available to us for strengthening our scientific and engineering education. The liberal arts colleges are the principal sources of candidates for our graduate schools of science. Recent studies have emphasized how remarkable has been the success of a number of small liberal arts colleges in preparing men and women to become distinguished in science. This points to the importance of still further strengthening the teaching of science in this type of institution, and thus attracting more college students to major in science and to proceed on to graduate school. Increasing the number of science majors in the liberal arts colleges is one of the quickest ways available to us to increase the number of scientists. This will require better laboratory equipment and facilities for these colleges and better professional opportunities for their science professors so that able ones can be attracted and held. It will require, also, an attitude in these institutions that does not underrate science — an attitude, as I shall emphasize later, that sees an understanding of science as one of the requirements of effective, liberal education in our technological society.

Graduate Study in Engineering

Next, we face the requirement that our American schools of engineering and our institutions of technology command more understanding and support. We witness the much-needed mobilization of national understanding and effort on behalf of medical education. We must achieve a comparable national effort in behalf of schools of science and technology, where inadequacy can be as perilous to the national welfare and safety as inadequate medical education.

Until now, our chief reliance in engineering education has been on undergraduate preparation — a system which has not universally risen above the training of technicians. While there will long continue to be an appropriate and essential place for the really professional four-year undergraduate engineering program, it must be supplemented by expanded graduate study in engineering.

Many industries have been ahead of the colleges in recognizing this need. As a consequence, they have evolved training programs of their own to carry their engineers beyond the levels of their four-year undergraduate education. If we had the graduate school capacity to handle these men, it would be more appropriate and advantageous in the long run for them to receive their advanced training in the university, rather than in industry. The engineer, no less than the scientist, can benefit from an atmosphere of uncommitted research, and our technological advance would be more certain if top graduates of four-year engineering courses proceeded on to graduate study.

Against the higher compensation and other attractions offered by industry and other noneducational organizations, engineering schools are now more vulnerable and more in danger of serious deterioration than other educational institutions using scientists. They are more vulnerable, even, than the schools

and departments of science. The scientist finds himself at home in our academic environment. This environment is not the natural habitat for engineers, whose professional work lies so much in industry and in the field.

The engineering schools are especially vulnerable now because their young and imaginative graduates and teachers — especially those in the advancing, growing fields of technology — are more in demand for noneducational employment than any other group in our educational institutions.

If engineering education is to meet this challenge and reverse, or even retard, the spreading scarcity of quality in engineering schools, it must find a way to make engineering schools a more attractive environment for top-flight engineers and thus for top-flight teaching of future engineers.

Even though their enrollments have been down, the teaching loads in our engineering schools — exceptions exist, of course — are very high, with the result that their faculties have too little opportunity for the creative work that leads to further professional development both as teachers and engineers. An informed observer recently estimated that only 10-20 per cent of our engineering schools had average teaching loads as low as 12 hours per week or less. When we reflect upon the fact that these institutions are hard-pressed to maintain their present level of staffing, we can readily surmise how difficult it will be greatly to increase enrollments and to enlarge graduate study without further burdening faculties and without a reduction in the quality of education.

The success of engineering education in attracting and holding more first-rate teachers will depend upon accelerating the development of more and stronger graduate programs. The graduate school and the research associated with it can provide engineer-teachers with the opportunities for professional activities and growth as engineers which they now find chiefly in practice outside of educational institutions. In those engineering institutions where strong graduate schools exist and where there is a fruitful alliance with basic science, an environment satisfying to first-rate engineers has been better achieved.

Professional Quality of Engineering

We must achieve this advance in the education of engineers if engineering is to achieve a professional quality and status comparable to that of medicine or law. We will not have solved our engineering manpower problem until we educate more engineers who unmistakably fulfill our society's standards of true professional excellence; men who have a profound understanding of their specialty, coupled with a broad and human culture. The development and growing numbers of this kind of highly educated engineer will serve to make engineering the profession it must be if it is to attract and hold its proper share of high talent.

Next, in my platform for maintaining our technological and scientific leadership, is the correction of the popular image of science.

(Continued on page 374)

Beyond Nuclear Physics

Atomic and nuclear structures are reasonably well understood. We stand at the threshold of exciting new discoveries about the fundamental particles of which our universe is composed

by M. STANLEY LIVINGSTON

PARTICLE accelerators are the "atom smashers" of the public press. They are highly effective research instruments for the study of nuclear physics. The concentrated, focused beams of high-energy particles which they produce (protons, deuterons, electrons, and so on) are used as probes to study the properties of atoms and nuclei. Experiments on the scattering of these high-energy particles, which penetrate even the tiny cores or nuclei of atoms, give information on the size, the electric charge, the magnetic characteristics, and other properties of the atomic nuclei. Bombardment with beams of such high-energy particles can disintegrate nuclei forming new types of atoms with unusual properties, such as radioactivity. Studies of the energies of the resultant fragments can tell how nuclei are bound together by nuclear forces.

We have been able to identify the stable and unstable forms of matter, and to measure the binding energies. Such information has led to rapid development of the field of nuclear physics, with such significant applications as the atomic bomb, nuclear reactors for production of power, and radioactive tracer isotopes for use in medicine and other sciences. Still other applications remain to be exploited, such as the power from thermonuclear fusion — the "taming of the H-bomb."

During the past 25 years, particle accelerators have been developed with almost explosive speed, increasing steadily in size, in particle energy and intensity, and necessarily, in cost. Particle energies are expressed in units of "million electron volts." A particle of one Mev energy could be produced, for example, by making it pass 100 times through a voltage of 10,000 volts. Energy has increased in steps through a sequence of accelerators such as: the voltage-multiplier (1 Mev), the Van de Graaff generator (5 Mev), the cyclotron (20 Mev), the betatron (50 Mev), and the linac or linear accelerator (80 Mev). In 1945, a new principle of synchronous acceleration, discovered simultaneously and independently in Russia and in the United States, led to a new family of higher-energy accelerators, such as: the synchrocyclotron (700 Mev), the electron synchrotron (1,000 Mev or 1 Bev), and proton synchrotrons, such as the cosmotron (3 Bev), bevatron (6 Bev), or the Russian machine which holds the present world's record of 10 Bev.

Of recent years a new development, with which I

was associated at the Brookhaven National Laboratory, called "alternating gradient magnetic focusing," has led to the design of a new family of machines of even higher energy. At Brookhaven an AGS machine is under construction which will produce 25 Bev protons; one of the same size is being built at Geneva; similar developments are under way in the U.S.S.R. In this category is the 6 BeV electron synchrotron, the "Cambridge Electron Accelerator," which is a collaborative project of scientists from M.I.T. and Harvard, and supported by the Atomic Energy Commission. It will produce electrons of five to six times higher energy than possible with existing machines.

Furthermore, still higher-energy machines are being planned although funds have not yet been allocated for construction. Chief of these is a 50-Bev electron linear accelerator at Stanford, and a high intensity FFAG (fixed field alternating gradient) machine by a group of scientists in the Midwest, in which special techniques may produce the equivalent of 500-Bev energy. The cost of these large installations would be of the order of \$100,000,000 each. Obviously, such large investments of public funds require careful study, and the scientific need for such expensive instruments must be justified.

The significance of the super-energy accelerators, such as the Cambridge electron accelerator and the Brookhaven AGS proton synchrotron, is that they are the instruments needed to explore a new field of science, that of "particle physics," which goes as far beyond nuclear physics as that went beyond atomic physics and chemistry:

(A) *Atomic physics* is the study of the electronic structure of the atom as a miniature solar system, with the nucleus at the center and electrons circling around in planetary-like orbits. Relatively speaking, electrons are at great distances from the nucleus and the binding energies are low. It only requires a few electron volts energy for a bombarding particle to displace the outer electrons from their orbits, or to study the binding energies and other properties of the electronic orbits;

(B) *Nuclear physics* is the study of the properties of the nucleus, a small, compact assemblage of protons and neutrons. The energy required to remove a proton or neutron is about seven Mev in most nuclei. Medium-weight nuclei (center of the periodic table) are the most tightly bound and the most stable.

Heavy nuclei like uranium can fission into two medium-weight fragments with the release of about one Mev energy per particle. Lightweight nuclei can combine into heavier ones (fusion), with the release of several million electron volts of energy per particle. We have learned how to trigger this energy release in fission, as our prehistoric ancestors learned to burn fuel for heat, but we have not learned why. We do not know the origin of, or the detailed properties of, the nuclear force which is involved. In the study of nuclear physics we use accelerators like the Van de Graaff and the cyclotron, with energies up to 20 Mev or somewhat more;

(C) *Particle physics* is the study of the properties of the individual protons, neutrons, and electrons of which matter is composed. The purpose is to break open these fundamental particles and find their internal structure, if it exists. We need to know why these three particles are the only forms of matter which are stable, out of the infinite array of possible other particles. In order to influence these very stable forms of matter, the bombarding particles must be of extremely high energy. It is to produce the necessary billions of volts energy to disrupt and affect the fundamental particles, that the super-energy accelerators are needed.

A significant start has been made in the study of particle physics. The first evidence came from studies of very high-energy cosmic rays; recently, the new super-accelerators have added more information. We now know that when single nucleons (such as the protons which are nuclei of hydrogen) are bombarded by other particles with energies above about 200 Mev, new unstable particles are produced which are called mesons (from the Greek meaning intermediate). These mesons are unstable and break up in a few microseconds, but instruments have been developed which can observe their properties in this short time. The origin of these mesons is obscure. They are apparently formed out of energy, the energy of the bombarding particle, following the Einstein equivalence of mass and energy. They represent an excited

state of matter which exists for only a short time, but nevertheless it is a sharp, distinct state which is almost stable. From the existence of these mesons, and measurements of other properties such as their mass, magnetic moment, spin and charge, theoretical physicists have been able to take a long step forward in formulating a tentative theory of matter.

With the higher energies of the cosmotron and bevatron (6 Bev), still other short-lived particles have been observed. Negative protons have been produced at the bevatron in small numbers, but sufficient to measure their properties and conclude that they have identical physical properties to those of the common positive proton in all features except the sign of the charge. This showed that the symmetry in nature, first observed with positive-negative electron pairs, also holds for heavy particles such as the proton. With this proof of symmetry, the experimenters next searched for and found the anti-neutron, identical with the normal neutron in all physical properties but differing in a strangely fundamental way. These twins or mates of the normally stable or fundamental particles are truly "out of this world." They are mirror-images of the normal particles in our world and are completely antipathetic to them. After the positive electron, negative proton, or anti-neutron have been sufficiently slowed down by passing through matter, they interact with their normal cousins in the laboratory and literally blow up. When a negative proton coalesces with a positive proton, the result is a tremendous release of energy — the entire mass energy of the two particles. The same is true for the neutron and anti-neutron. The amount of energy released is nearly one Bev per particle, 1,000 times larger than the amount released per particle by nuclear fission in the atomic bomb.

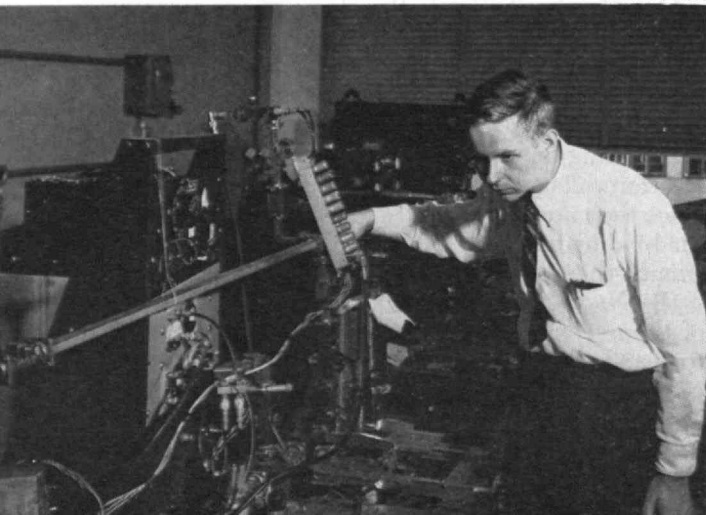
The unusual properties of incompatibility with normal matter of these anti-particles led to their present name: "strange" particles. Theoretical scientists are just beginning to catch a glimpse of some underlying principles in these phenomena, and are developing theories which predict other classes of particles with differing degrees of "strangeness." A few of these theoretical predictions have been tested by further experiments and seem to be partially correct. So it is possible to see the early beginnings of a theory of matter. But many more years of experiments and more years of theoretical calculations will be required before a valid theory can be established. And in the meantime, scientists in this field are calling for more of the essential tools, the super-energy particle accelerators.

At Cambridge, the scientists of M.I.T. and Harvard interested in this field developed plans several years ago for an accelerator of a unique type which would provide the means of extending the research program in particle physics. A site was chosen at Harvard, and Harvard also offered to administer the project. The Atomic Energy Commission has allocated \$6,500,000 for the construction, which is well under way. A laboratory-shop control building will be completed in April and the accelerator housing will be ready for installation of accelerator components by December of this year. A ring of 48 alternating gradient magnets will form a circle of 236-foot diameter, almost large

(Continued on page 368)

Electronics and atomic physics deal with the electronic structure of atoms as a miniature solar system. Since the electron was discovered six decades ago, man has progressed to a study of the properties of the nucleus (in nuclear physics) and finally to particle physics in which the properties of elementary particles of nature are investigated.

M.I.T. Photo



Our Foreign Aid Program

—AN ENGINEER'S APPRAISAL

Our aid in education, agriculture, and public health has been of outstanding value, but we have not had equal success in aiding industry in foreign nations

by HARRY A. KULJIAN

OUR Foreign Aid program — its accomplishments and its shortcomings — can be best appreciated when related to the industrial status of those nations and areas of the world we seek to benefit. To throw the spotlight on a few basic facts, I would like to take the reader with me on an imaginary trip around the globe.

When we get to Europe and start touring through the industries of England, France, Germany, Switzerland, and Italy, we will find that these countries are as far advanced as we are industrially. There are plenty of jobs for everyone, and nearly everybody keeps busy and makes a good living. But we find a lesser degree of industrial development and a correspondingly lower standard of living throughout the rest of the European continent.

In the Near East, we find practically no large industries in such countries as Turkey, Syria, Lebanon, Iraq, Iran, Trans-Jordan, and Saudi Arabia. There may be refineries where there are oil fields, but in general, industries are very scarce. Most of the people in the Near East are small farmers, who depend upon their own muscular power, or that of domesticated animals, to do the required work for farming.

Water Everywhere — but No Industry

Two great rivers, the Euphrates and the Tigris, flow through Turkey and Syria and then through Iraq into the Persian Gulf. Yet nowhere along their entire course do the farmers obtain any benefit or help from this vast source of power.

The very same thing holds true for both India and Pakistan. The Indus River, which originates in Kashmir, makes its way to the Indian Ocean without dispensing help anywhere along its 2,000 miles. Both countries now realize its great value, especially for irrigation. As soon as their water dispute is solved, they will harness this giant river to generate electric power and use it (as we do at Grand Coulee Dam) to pump water to higher elevations and remote areas. In this way, the two nations can give farmers plenty of water to raise their crops and provide industries with cheap electricity.

When we proceed a little further, to Burma, Thailand, and Indo-China, we find farming is done more effectively, because here at last some of the fresh water resources are put to use for navigation and irrigation purposes. When you fly over Thailand, you see rice fields hour after hour. This is flat country,

and it is honeycombed with irrigation canals. The main occupation is farming. The natives tell you with pride that Thailand is the only country in the world where there are no beggars, and where there is plenty of food for everyone.

Japan is the only country in the Far East which has industries like those of Europe and the United States; it is therefore relatively easy for the Japanese to earn a livelihood. The Japanese are also excellent farmers. But Japan is suffering now from a lack of markets for its finished products. In order to find a market for its goods, Japan has been trying hard, during the past few years, to persuade the United States to permit trade between Japan and Communist China.

Why We Began the Marshall Plan

As we are reminded so often, Americans are living in a highly industrialized country where almost everyone can have employment and enjoy a fairly high standard of living. Almost every family has a car, and almost every house boasts of a refrigerator, a vacuum cleaner, a heating system, hot and cold running water, and many other luxuries.

In Europe, some of these comforts may be found in a working man's home. But in the Near East, the Far East, Africa, and most of the South American countries, the working classes have virtually none of these facilities for comfortable living which we have come to regard as necessities.

In most of the countries of Africa and South America, there are practically no industries; for the most part, the people are small farmers, and it is difficult for them to make a living. And the old truism still holds: you cannot expect men with empty stomachs to respond with any enthusiasm to preachments about freedom, equality, or a peaceful world.

Realizing this grave problem after World War II, the United States government initiated the Marshall Plan, with the primary object of rehabilitating war-torn European countries. Later, financial and technical aid was extended to many other countries to promote their industrialization.

Water Power Waiting to be Harnessed

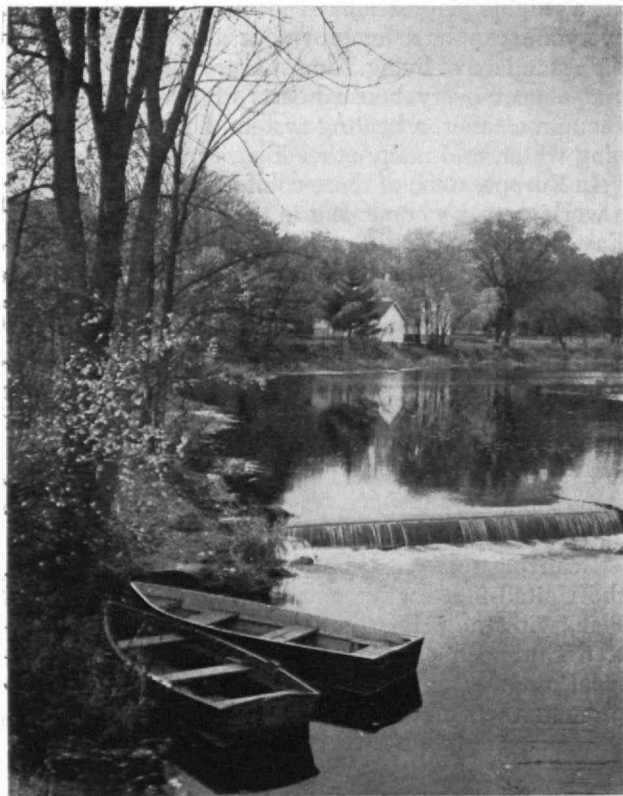
A report issued by the Federal Power Commission in June, 1954, indicates that 94 per cent of the world's surface water supply is still undeveloped. Even in the United States as much as 80 per cent is

still developed! Even if these figures should not be precise, it is clear that vast water resources still remain to be tapped for man's service.

It is encouraging to note that, since the end of World War II, people in many parts of the world have become aroused to the vital need of utilizing their fresh water resources. The result will be to raise their standard of living through proper flood control and through irrigation, which will produce more food, new hope, and peace to the underprivileged peoples of the globe.

Throughout the world at the present time, on an average, about one acre of land per person is being cultivated, and this produces an inadequate diet. We must not only bring new land into production but must make the area we are now cultivating more productive if we are to solve the hunger problem. A large part of the answer lies in the use of water for irrigation, because, on the average, an irrigated acre will produce four times as much as a nonirrigated acre.

I have traveled quite a bit all over the globe and have seen some of the world's great rivers. A very large percentage of the waters of these rivers is now going to waste. We think of the Missouri-Mississippi as a mighty stream. It is — but the Amazon in South America is 20 times as large; the Nile and Congo in Africa is 15 times as large; the Euphrates-Tigris flowing through Turkey-Syria-Iraq, the Indus through India-Pakistan, the Brahmaputra flowing through Tibet-India, and the Yangtze in China — are all very large rivers. In these tremendous rivers lies the potential for a vast agricultural expansion that could easily feed the world.



Raymond E. Hanson, '03

It has been estimated that more than nine-tenths of the world's surface water supply is not yet harnessed. Even in the United States, as much as 80 per cent is still undeveloped.

Where We Have Done a Good Job

We Americans feel that it is our responsibility to build up the educational, sanitation, and industrial systems of underdeveloped countries, to improve their standards of living, and thus maintain their friendship and their strength as a vital part of the free nations of the world.

This goal is a credit to our ideals as a nation, and there can be no doubt that it places our efforts on the highest humanitarian level. Merely because our intentions are good, however, gives us no guarantee that the results of our efforts will be equally good. It is certainly our duty to observe carefully how we are carrying out this magnificent program — and what the results have been to date.

There can be little doubt that our work in the phases of education, agriculture, and public health in these foreign countries has been of outstanding merit. And I can testify from my own experience that the people in these countries, on all levels, are grateful for the aid thus extended to them. These three fields of endeavor touch them very closely. When an adult learns how to read, when a farmer learns how to operate a tractor, or when the village is sprayed with DDT — these are all contacts personal enough to leave a deep impression on these people, and they appreciate the efforts of their benefactor.

A Better Way To Help — in Reverse!

It is quite a different story, however, in the field of industry. There is very little to our credit in this area. One of the reasons may be that our own industries can ill afford to spare the good men we have. For the most part, the men we can hire and send abroad are industrial engineers, who will know how to make a time study, how to market a product, how to introduce a straight-line production method. But few of them, if any, will know how to manufacture sulphate pulp, or how to make rayon from viscose, or how to spin cast-iron pipe, or how to manufacture radio tubes. Yet precisely such knowledge is required to solve the industrial problems that will arise in trying to foster industry in foreign countries. Lacking this highly specialized knowledge, our men have failed to meet the requirements of foreign nations, and the results therefore have been disappointing.

I believe there is a very simple solution to this sad state of affairs. All that is necessary is to reverse our present procedure. Instead of sending our American "experts" abroad, we should invite a carefully selected group of qualified engineers, technicians, and industrial leaders from foreign lands to come to the United States. While they are here they could receive a thorough training in our leading manufacturing plants, laboratories, or engineering offices; they could visit power plants and other installations; in short, they would learn about particular industries first-hand, and under the guidance of leaders in each field. How far superior such training would be, compared to any instruction our technical men could give in a foreign land devoid of industries!

This method has been applied in training a foreign group to take over the operation of a power plant in

(Continued on page 362)

BUSINESS IN MOTION

To our Colleagues in American Business ...

With the demand for heavier electrical loads constantly on the increase, the demand for electrical equipment of greater capacities also continues to grow. One of those items is circuit breakers.

As a result, design engineers are constantly faced with the problem of not only making breakers of greater load-carrying capacity, but of keeping down their weight and physical size.

In wrestling with just such a problem the design engineers of a leading maker of circuit breakers visualized the extruded copper shape (Fig. "A") as being in two pieces. It was thought that a single shape of that size could not be made satisfactorily. At this point the engineers got together with Revere's T.A. (Technical Advisory) Service. The result was the one-piece copper extrusion shown. Not only was assembly cost reduced but machining time also was saved.

Before arriving at the selection of the Revere Aluminum Extrusion (Fig. "B"), also used in the same circuit breaker, various metals and their properties were studied. First, an aluminum casting was thought to be the answer. Then it was found that an extrusion

would weigh less and have a higher strength ratio than a casting. So, by using an aluminum extrusion, both space and weight were saved. Here is an example of where a material costing a little more per pound saved money in the end.

In all, Revere supplied 5 copper and 2 aluminum extrusions, each designed to fit specific requirements.

Aluminum was used where strength and weight were the prime consideration, while copper was employed for current-carrying members. The use of extruded shapes saved machining time and costs.

Here you have still another example of Revere supplying the right metal to do the best job with the greatest economy . . . be it aluminum, copper or

any one of their alloys. Not only the copper and brass industry but practically every industry you can name is able to cite similar instances. So we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence and see if you cannot make a better product at lower costs by specifying exactly the *right* materials.

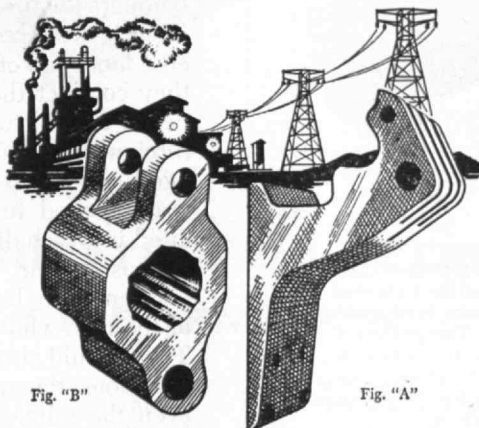


Fig. "B"

Fig. "A"



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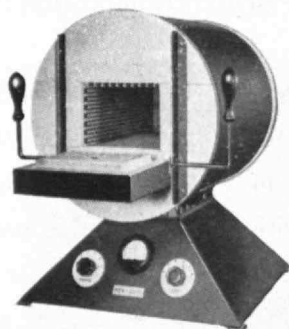
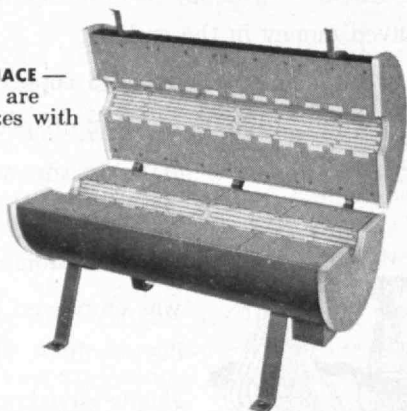
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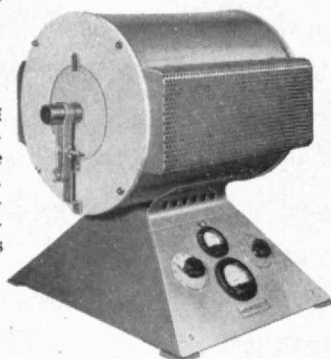
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OUR FOREIGN AID

(Continued from page 360)

India. While obviously on a small scale, this experiment met with much success. I am confident that, if the same principle were to be applied on the larger scale I am suggesting, it would bring gratifying results.

Not the least of the benefits that would flow from this procedure would be the firsthand knowledge of American institutions and our way of life that our foreign guests would absorb while pursuing their training. Returning to their native lands, they would take back with them technical knowledge of a particular industry. But they would also take back an understanding of America that would spread to many others, and thus create a constantly growing attitude of good will toward us. This is really what our Foreign Aid program is intended to accomplish — and we should carry out this aim in the most effective and most economical way.

We Must Mend Our Manners

If we are to continue the present system of sending our men abroad, we should at least make a real effort to remove one cause of friction which seriously hampers the progress of our work. Even with the best intentions in the world, the men who are sent to foreign lands are often so conscious of their mission that they conduct themselves with a patronizing and superior air. All too often, indifference or contempt for foreign dress, customs, and ways of living has damaged our efforts to win the good will of people we really hoped to aid. Numerous instances could be cited in which disrespect for foreign ways has created serious trouble.

Even more than tact and consideration are required of the men who are chosen to carry out work abroad. They should also have a knowledge of the culture and traditions, the economy, commerce and industry, and even the religious customs of the country to which they are assigned. This is not always acquired in a quick refresher course on the airplane going over, or in a cramming session just before the take-off. The increasing attention to humanities courses, under the leadership of John E. Burchard, '23, Dean of the School of Humanities and Social Studies at M.I.T., should help students who recognize the importance of the humanities as a part of their training. The need for sympathetic understanding and tolerance

(Continued on page 364)

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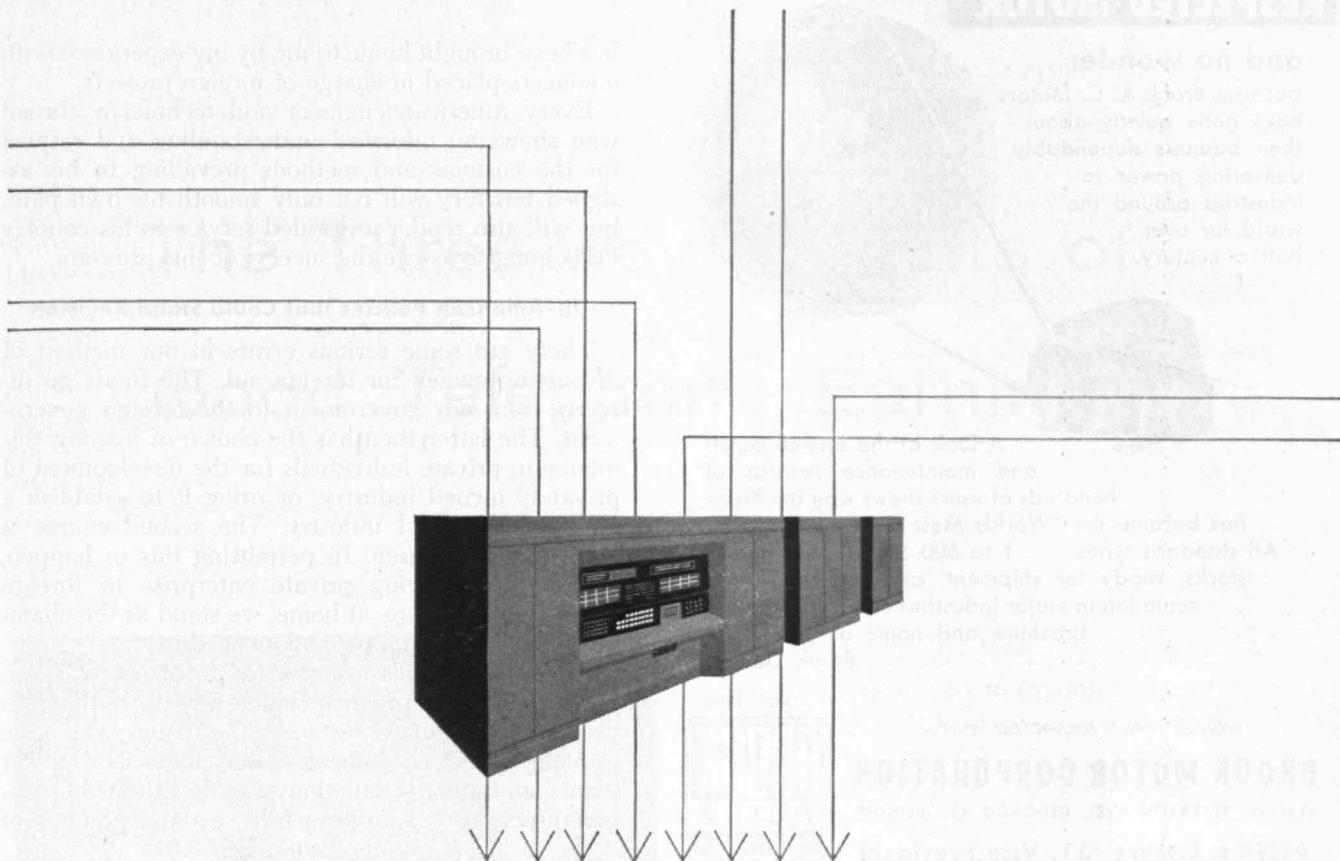
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The **ORGANIZATION** and **RETRIEVAL** of **INFORMATION**

The organization and retrieval of large volumes of diverse types of information is rapidly becoming one of today's more serious problems. Major areas where the problem exists include business and industry, the military, the government, and the scientific and engineering community itself.

In its simpler forms, the problem may involve, for example, the automatic handling and analysis of business data such as payrolls, sales and manufacturing figures, insurance premiums, and other essentially statistical data. At the other extreme are certain complex military situations which require the concurrent interpretation, analysis, and integration on a very short time scale of data from a wide variety of sources, including field reports, photographs, news reports, estimates of industrial activity, and the like. In many of these situations, there is the additional requirement to translate the information from a foreign language into English.

The development in recent years of electronic data handling equipment is now making possible the practical solution of many of these problems. Such equipment has the capability to perform arithmetic operations, make decisions among alternatives, store

and retrieve large quantities of information, and at high speed automatically perform long, complex sequences of operations.

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Engineers and scientists with experience in the following fields are invited to explore the wide range of openings now available:

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OUR FOREIGN AID

(Continued from page 362)

has been brought home to me by my experience with engineers placed in charge of foreign projects.

Every American engineer and technician abroad who shows an informed understanding and respect for the customs and methods prevailing in his assigned territory will not only smooth his own path, but will also render a decided service to his country by helping to assure the success of this program.

Un-American Policies that Could Stand Revision

There are some serious errors in our method of disbursing money for foreign aid. The funds go directly from our government to the foreign government. The latter then has the choice of loaning this money to private individuals for the development of privately owned industry, or using it to establish a government-owned industry. The second course is often the one chosen. In permitting this to happen, we are discouraging private enterprise in foreign countries while here, at home, we stand as the champion of private initiative and ownership.

Coupled with this unfortunate development is another ill-advised practice which we do nothing to prevent. In too many instances the money which we provide for the equipment of new industries, power plants, and other installations goes to European manufacturers. Most European firms make a practice of

(Continued on page 366)

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OUR FOREIGN AID

(Continued from page 364)

offering "free" engineering services along with the sale of their products. They are able to convince the foreign bureaucrats — and, incidentally, also convince many of our uninformed International Co-operation Administration men — that since their prices appear to be cheaper they should get the contracts. In thus misusing our own money, we have given preference to European manufacturers rather than to our own American firms, and have helped to establish government-owned industries contrary to American domestic practices.

It would be comparatively easy to correct these unwise policies. We do not want to encourage government-owned industries — certainly not beyond establishment of public works, such as hydroelectric power plants, sewerage and waste-disposal plants, or water works. In making money available for textile, rayon, fertilizer, or general chemical plants, or for iron and steel mills, we should take the precaution of insisting that our money be used only to assist private enterprise, rather than a socialistic economy.

In many instances, it would be wiser to give machinery instead of money, with the stipulation that such machinery is to be made available only to privately owned industries. We should certainly receive assurances and formal agreements from all foreign countries receiving our aid that industries or plants financed and equipped with American funds will not be nationalized in the foreseeable future.

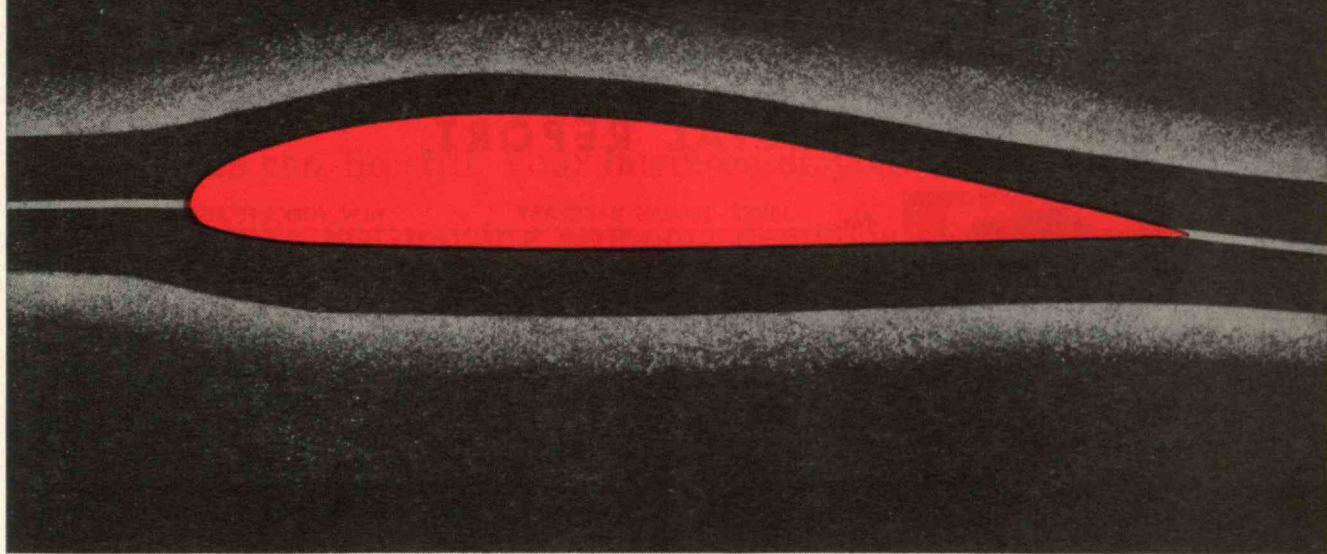
A Change that Would Work Wonders

My strongest conviction centers around the fact that our government is overlooking one method of supplying foreign aid which could easily prove to be the most effective of all, and would be a boon to our hard-pressed taxpayers. The way to build up industrially underdeveloped countries, effectively and on a grand scale, is to construct industrial plants financed jointly by American and foreign investors. If Pakistan or India wants to build a paper plant, for example, its construction might be financed partly by American capital and partly by local capital. The foreign country would be provided with the needed capital, the technical design work, and the knowledge of operation that is necessary to assure a successfully run plant. This plan would have the merit of being of equal benefit to the foreign country and to our own economy — and at the same time would be a terrific stimulant to the private enterprise of American venture capitalists. Everyone concerned would profit.

Our own experience in foreign countries supports the belief that this plan would work. We are engaged in ventures in India, Pakistan, and Iraq, all of which are being operated as joint enterprises with local engineers. A vital phase of each project involves the training of native men to play an increasingly important role in the design, construction, and efficient operation of large plants.

By the use of these methods — the hand-in-hand partnership of American private capital and brains
(Concluded on page 368)

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(Concluded from page 366)

with foreign on-the-spot capital and talent, and the training of native skilled workers with complete confidence in their resourcefulness—I believe the goal of our Foreign Aid program can be achieved more surely and at a fraction of the present cost. If an additional incentive is needed to attract more American capital, the government could easily provide it by allowing a tax exemption of 10 or 15 per cent of corporate profits invested in approved foreign industries. In the exemption now permitted for South American investments, there is ample precedent for such tax consideration. The policy should be broadened to apply to every foreign country approved under our program.

With this final spur to participation by our American capitalists, we would look forward hopefully to the day when our magnificent humanitarian program for the benefit of the underdeveloped countries will be carried on successfully without the huge outlay of government funds. Let our businessmen run the program as businessmen, in close and friendly association with the businessmen of foreign lands, and they will prove to be the selling agents of free enterprise to the rest of the world. They will win the admiration and respect of both business and government leaders in foreign-aid countries. Under such a plan, before long we will be able to count foreign-aid nations among our staunch friends and allies.

(Continued from page 358)

enough to circle a football field. It will be located in an underground, circular tunnel building with earth-fill above for shielding the high-energy radiations. The magnet will be powered 60 times per second, and in each cycle a beam of electrons will be injected and accelerated to high energy. Beams of particles and radiations from targets will emerge from the tunnel through channels in a thick concrete shielding wall and traverse a large experimental laboratory, in which the scientific experiments will be set up.

High-energy electrons were chosen, rather than protons, to exploit their unique differences and advantages. They will produce a forward directed beam of gamma rays of up to six Bev energy on striking a target in the circular vacuum chamber, which gamma-ray beam will emerge tangentially into the experimental laboratory. The extremely sharp beam will have great advantages in experiments. Energies and intensities will be sufficient to produce large numbers of strange particles, of all types. The production process of forming strange particles by gamma rays is inherently simpler in a theoretical sense, so analysis of the results may have great significance.

The field of particle physics is basic research. There is no known area of practical application at present. The motivation of the university scientists is the search for knowledge about nature, at one of

(Concluded on page 370)

SPECIAL REPORT



Mr. JAMES THOMAS McCREARY NEW YORK LIFE AGENT
at SAN FRANCISCO, CALIFORNIA

BORN: July 30, 1915.

EDUCATION: Butler University, B.S., 1938.

MILITARY: U.S. Navy, April '42—January 3, '46—Lt.

PREVIOUS EMPLOYMENT: 1938–1942—Insurance Sales.

REMARKS: On December 28, 1945, while still on terminal leave from the Navy, James Thomas McCreary joined New York Life's San Francisco General Office. His fine business and educational background,

combined with a pleasant business manner, helped Tom McCreary become one of the Company's leading agents. Honors bestowed on him include continuous membership in New York Life's Top Club, the President's Council—an organization composed of the Company's top 200 sales leaders. And his outstanding achievements have qualified him for membership in the industry-wide Million Dollar Round Table every year since 1947. Well liked and respected by clients and associates alike, Tom McCreary can very well look forward to many more years of success with the Company he serves so well.

Note

Tom McCreary is now solidly established in a career with the New York Life Insurance Company that can offer security, substantial income, and the deep satisfaction of helping others. If you'd like to know more about such a career for

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BEYOND NUCLEAR PHYSICS

(Concluded from page 368)

the extreme frontiers of science. The challenge is dramatic to an extreme, and advanced students are flocking into this field of science for their graduate studies and thesis problems. The university is a proper location for such basic research, but because of the large apparatus requirements it is necessary to seek governmental support. All of us in the scientific departments and the institutional administrations are aware of the essential need to keep the scientific planning and management free from stultifying governmental controls. The Atomic Energy Commission has acted with wisdom in providing for complete university control of the scientific program, which will be supervised by a joint committee of M.I.T. and Harvard scientists and administrative representatives of both universities.

So this is what lies beyond nuclear physics — the nature of matter itself. We are just at the threshold of exciting new discoveries about the fundamental particles of which the world is composed. The purpose is knowledge for its own sake. And if, in the future, some useful application to human needs comes from these beginnings, it will only be repeating our past experience and will again justify our faith in the ultimate utility of basic research and the search for knowledge.



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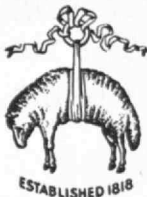
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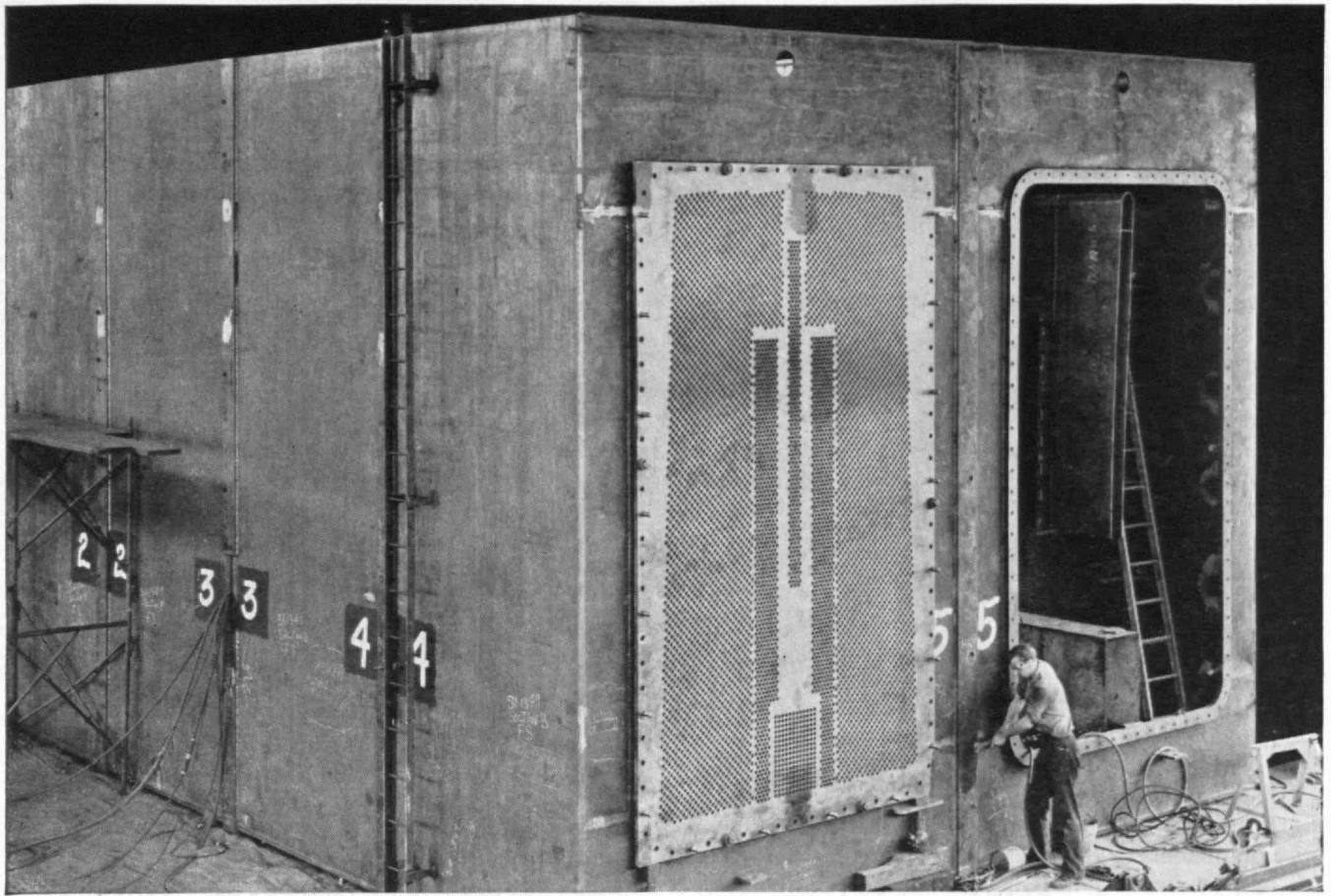
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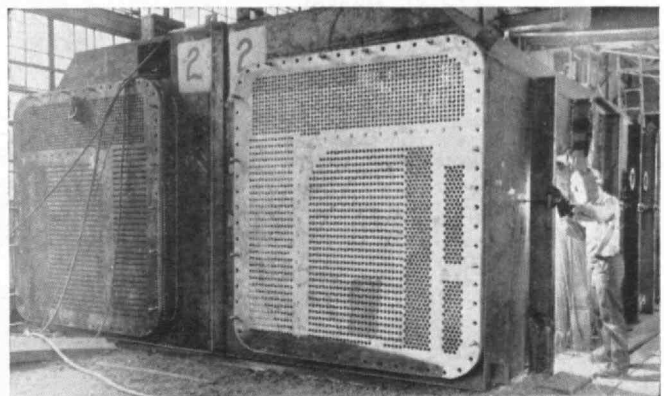
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ROLE OF THE ENGINEER

(Concluded from page 352)

of pulling together whole groups of disciplines into a new common effort.

And now, thirdly, we come to the heart of the debate. How much basic science shall we infuse into the education of an undergraduate engineer? How far shall we go in discarding all the drafting and design, the shop and more practical, immediately useful professional subjects?

Here it is that each institution must make its own hard decision. There are thousands of boys in this country with an aptitude for doing, with a love for mechanical things, and with no mind for mathematics. There is and there will be work for them to do — mountains of work — work that is indispensable for the smooth operation of our great industrial machine. It would be folly to cram these heads with advanced calculus and quantum mechanics. Let us not waste and discourage this human talent, but rather direct a part of our educational effort — indeed perhaps the largest part — to their particular needs and ours.

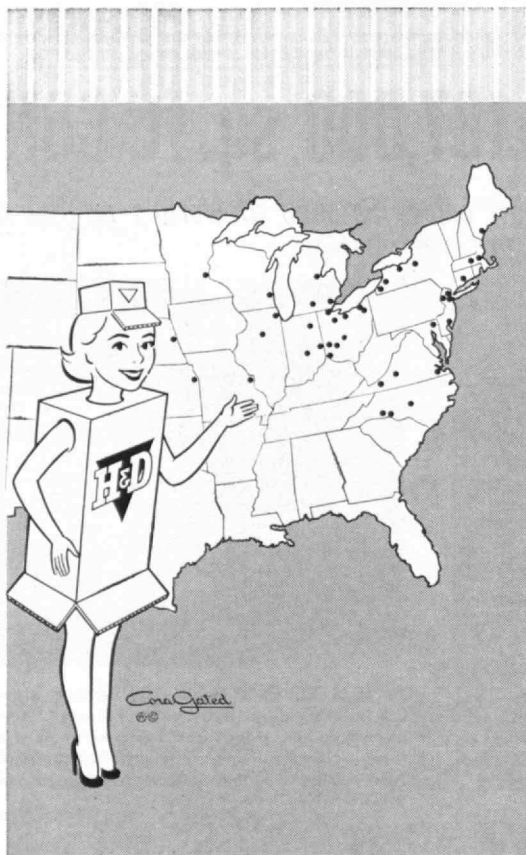
But now in addition, let us also recognize that henceforth the vanguard of engineering, the great creative genius of the profession, will march forward hand in hand with science. The research engineer of the future may be concerned with the anatomy of components or the physiology of systems. His interest may center on materials, on fluid flow, combustion, or

information theory. Whatever it may be, it is unlikely that in these areas he will make important contributions without benefit of a superb training in physics, chemistry, and mathematics.

As one observes the changing scene at M.I.T., it is apparent that increasingly our faculty is turning to these aspects of the new engineering as our own particular mission. We would, perhaps, be moving in this direction even faster, were it not for certain reservations, certain misgivings which I likewise share.

Because, for all the common ground, engineering is not and never will be science. There is inherent in the profession of engineering a whole set of attitudes and concepts that are completely foreign to pure science. The engineer must have a feel for materials, a concern for cost, an understanding of the factors of size and weight, an appreciation of the problems of maintenance and replacement; and above all, an unfailing sense of responsibility toward his client and the public good.

As we move steadily toward the scientific and theoretical in our engineering training, it seems to me of the utmost importance that we preserve the deep qualities of the profession. They are, in a very real sense, the humanities of engineering. I believe most earnestly in the importance of a liberal education. I find no conflict in the concept of undergraduate professional training that is both liberal and thorough. That is the kind of an undergraduate experience that M.I.T. aspires to give.



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Because science is required for the maintenance of military strength and because it has made spectacular contributions to the development of weapons, it has come to be thought of with disproportionate emphasis on its military significance. This distortion needs correction, and it is heartening to note current efforts to re-emphasize the humane values of science and to underscore its immense contributions to the good life and the good society. Through medicine — through the creation of a better environment — through its contributions to a higher standard of living and of life — through its enhancement of man's dignity by its enlargement of his understanding — through the values it has established for our society — science has come to be one of the great humane and constructive forces of our time.

The best description of science that I know comes not from a scientist but from a philosopher — Charles Frankel. "Science," says Professor Frankel in his eloquent book, *The Case for Modern Man*, "is an example par excellence of a liberal art — a deliberate, selective reordering of experience, which releases men from the narrowness and urgency of their routine affairs, carries them beyond the limitations and accidents of their lives, and makes it possible for their commerce with the world to have scope, order, and systematic consequences. It has been used as an in-

strument of . . . war, but its primary function is more humane and, as it were, aesthetic. And its relation to practice is the relation of any fine and liberating art — it carries men beyond the foreground of their experience, and enlarges the dimensions of human choice by acquainting men with the alternative possibilities of things . . ."

And to this description can be appropriately added the following observation of Warren Weaver of the Rockefeller Foundation. The facts, he said, "do not support the concept of science as some sort of super creed, magical and mysterious as it is all-powerful, arrogant from its successes, and avid to invade and conquer, one after another, all the fields of human activity and thought. This viewpoint does not justify the notion that science is so special as to be unique, as well as so curious as to be incomprehensible. This does not depict scientists as strange creatures who are in one sense so objective, judicial, and precise as to be incredible, and in another sense so apart from life as to be selfish and sinister.

"On the contrary, these descriptive comments picture science as the servant of man, not his master; and as a friendly companion of art and of moral philosophy. This is a science that is the way it is because man wants it to be that way. It is a natural expression of both his curiosity and his faith."

(Concluded on page 376)

* New York: Harper and Brothers, 1956.



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AMERICAN SCIENCE AND TECHNOLOGY

(Concluded from page 374)

If we can make science understood in the terms of Frankel and Weaver, we can gain much for science and culture. We can still further break down the antagonism between the domain of science and the domain of the humanities and social sciences, with the result that both will join together to further man's wisdom and understanding. It is this concept of science as a servant of man, and as basically a humanistic discipline, that helps to strengthen my optimism about progress being real and technology benign.

It is important that this image of science be clearly seen, as well as its image as a builder of weapons. This is another objective, this image of science in its true humane proportions, that we need to achieve as we seek a balanced science program for the future and a proper place for science in our national life.

With these examples of some of the current opportunities and problems facing us, let me conclude by emphasizing the great responsibility which rests upon American science today in the light of the extraordinary opportunities which have been given to participate in the formulation of national policy. The growing linkage of science and technology with government demands of scientists a new order of poise, steadiness, and statesmanship. The current emphasis on science, if it is not to cause reactions adverse to science, also requires of the scientific community humility and a sense of proportion. It requires of scientists a recognition that science is but one of the great disciplines vital to our society and worthy of first-rate minds; a recognition that science is a partner—sharing and shouldering equally the responsibilities which vest in the great array of professions which provide the intellectual and cultural wealth of our society.

In touching, however, superficially, upon the special responsibilities of scientists to walk humbly as their responsibilities increase, I also am expressing my faith in the growing opportunity of science not only to deepen our understanding and enlarge our views of the world—not only to enhance our sense of beauty and order—not only to augment our power and wealth—but also to minister humanely, benignly, and responsibly to the needs of our fellows, our government, and our country.

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TREND OF AFFAIRS

(Continued from page 350)

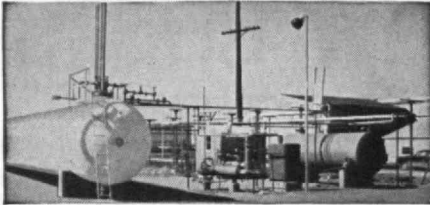
Mr. Kispert's final set of figures pertained to scholarship aid. As the tuition increase goes into effect, the Institute plans to increase undergraduate scholarships in greater proportion than the tuition increase. Approximately 25 per cent of the undergraduates will be receiving tuition awards averaging \$1,100 per year. Graduate fellowships financed by M.I.T. will also be increased in greater proportion than the rise in tuition. Compared with some other private institutions, M.I.T. shows up relatively poorly on scholarship aid. However, the Institute has the largest and probably the most successful Loan Fund in the country. This has decreased the need for a larger amount of funds being put into undergraduate scholarships. At the present time M.I.T. lends about \$400,000 a year to undergraduates. The Loan Fund will be modified to provide loans to the freshmen for the first time in its history. Including scholarships and loans which M.I.T. provides to undergraduates, Student Aid amounts to 29 per cent of tuition, as compared to 16 per cent in 1940.

In closing, Mr. Kispert stated his personal conviction that all private institutions must begin to set tuition rates so that the tuition will cover a higher proportion of the total academic cost. This would not seem to be a practical move until new ways of providing large amounts of student aid are found. Much attention is now being given, both at M.I.T. and at other institutions, to various proposals of long-term repayment of tuition, and other means of achieving long-range financing of higher education.

In his talk on modern surveying, Professor Miller stated that, in the Department of Civil Engineering, extensive research has been conducted in the application of photogrammetry and electronic computers to civil engineering problems. New aids in surveying include precision cameras for aerial photography, microwave measuring devices in place of the customary optical transits and steel tapes, stereoscopic devices for plotting contours directly from aerial photographs, and high-speed digital computers for carrying on many laborious calculations needed in civil engineering. Almost all states and probably 100 civil engineering firms currently utilize electronic computers for some of their long, tedious calculations. By providing the computer with sufficient numerical representation of a particular terrain, the computer itself can be used to establish alternate highway routes or dam locations, and perform the necessary calculations to ascertain the estimates of the relative costs of various routes — taking into account even such factors as the type of soil and the valuation of the property. By taking advantage of instrumental developments initiated in other fields, the civil engineer is enabled to concentrate on performing his truly professional role. Professor Miller's talk was well received and gave Council members new concepts of modern methods of mapping the earth's surface.

(Concluded on page 380)

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	12		X 1"
	16		X 1 1/4"
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TREND OF AFFAIRS (Concluded from page 378)

Cosmic-Ray Shower Experiment

■ The largest cosmic-ray shower experiment ever attempted will be set up by M.I.T. physicists in New Mexico next June. Financed by a two-year grant of \$134,000 from the National Science Foundation, the experiment itself will sprawl over 2,500 acres of the Volcano Ranch, 15 miles west of Albuquerque. The M.I.T. men will cover this huge area with 76 plastic scintillation counters and associated electronic equipment, linked together by 40 miles of coaxial cable. With this equipment the scientists will measure the size of cosmic-ray showers striking the earth, and the energies of the primary cosmic-ray particles that caused them.

The installation of the giant M.I.T. air shower experiment in New Mexico will be started in June and will probably be completed in September, at which time the experiment proper will begin. Analysis of the data gathered in New Mexico will be done mainly at M.I.T. Dr. John D. Linsley, Assistant Professor of Physics, will be in charge of the experiment and will remain in New Mexico until September, 1959. Dr. Linsley's chief associate will be Livio Scarsi, who is on leave from the University of Milan as a Fellow in the School for Advanced Study at M.I.T.

The M.I.T. physicists are looking for clues that may help solve important problems in astronomy, nuclear physics, and cosmic-ray research. The M.I.T.-New Mexico experiment will be an extension of an earlier experiment carried out at Harvard, Mass.

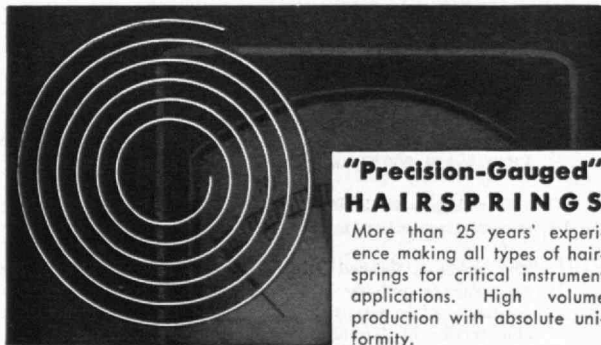
MAIL RETURNS

(Continued from page 334)

favorite "old saw of the scientists," is not nearly as serious as those which follow.

Second, United States policy-makers have not been very wise, nor have they generally been well advised in the field of aviation, going way back, but, again, particularly during the past five years. The late President Roosevelt toyed with model battleships on his desk while the late General "Billy" Mitchell talked to him about aviation. The spectacular advent of World War II literally forced an aviation program upon the nation, almost too late. President Truman was aided by some out-

(Concluded on page 382)



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MAIL RETURNS

(Concluded from page 380)

standing lawyer-statesmen with an interest in aviation, men like Lovett, Forrestal, Foster, Symington, Finletter, and McCone. However, during the past five years, when the impact of aeronautics on our security and economy has been the greatest in our history, President Eisenhower did not have a single Cabinet-level adviser with outstanding competence in the field of aeronautics, until the belated appointment of an assistant for Aviation Facilities Planning.

Third, among the many eminent scientists who have served in lower-level policy jobs in government, for example, as chairman of the Defense Research and Development Board of Assistant Secretary of Defense for R. and D., there has never been an outstanding aeronautical scientist. Furthermore, until relatively recently, there was only one man with an aeronautics background on the President's Science Advisory Committee.

Fourth, while aeronautics has been having its greatest impact on our lives, outstanding leaders in aviation have been largely content to ignore their responsibilities for "conveying their message" to their fellow citizens. By way of comparison, the physicists, for example, through the *Bulletin of the Atomic Scientists*, have accepted their broader social responsibilities and have become an important force in United States policy-making. On the other hand, the aeronautical scientists still talk mainly only to themselves; for example, during the past 12-year history of the Institute of the Aeronautical Sciences, the writer recalls only one three-hour session dealing with the social impact of aviation.

These four main reasons, and many others equally important, have had together a great retarding influence on the progress of aeronautics in this country. Dr. Blizard has spoken of only one of them.

However one might differ with the presentation, Dr. Blizard certainly does deserve to be warmly congratulated for bringing up for discussion a very important subject in the field of aeronautics. One would hope to see the discussion continued through contributions from aeronautical scientists, whose acceptance of a greater measure of social responsibility is rather overdue.

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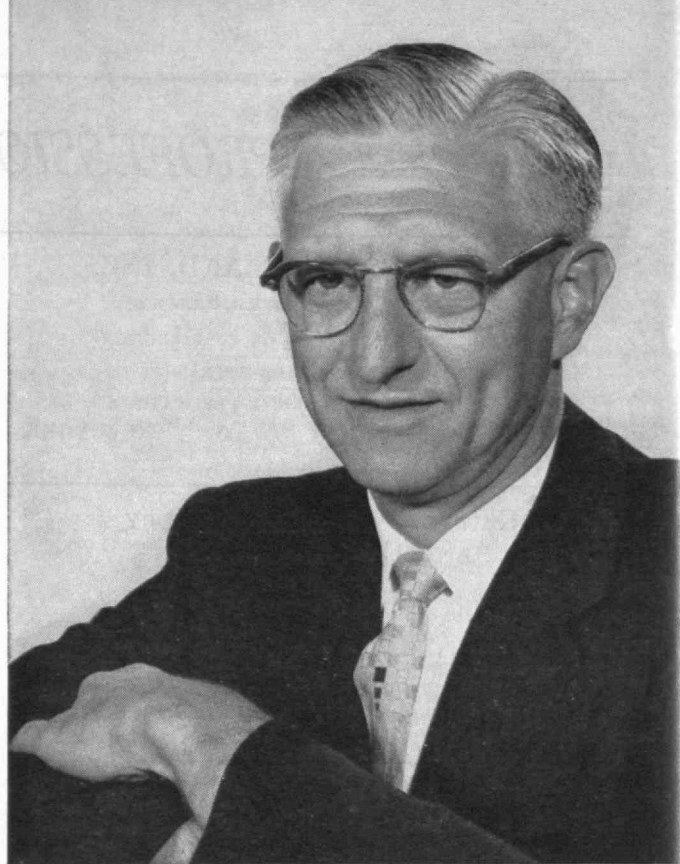
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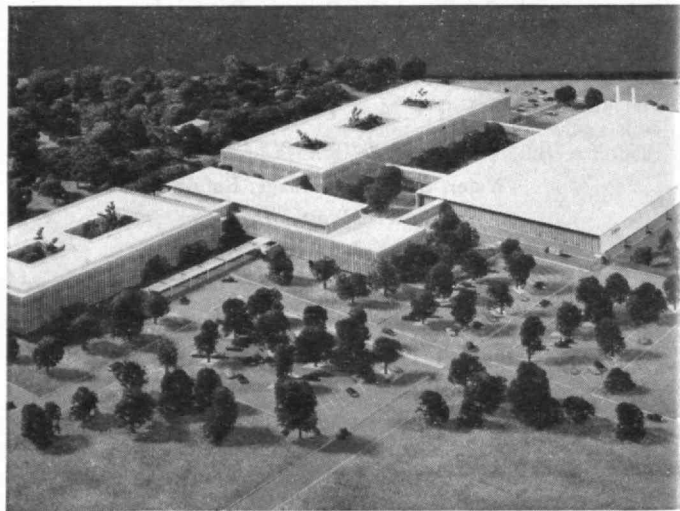
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ALUMNI AND OFFICERS IN THE NEWS

On the Upward Trail . . .

In addition to the 33 Alumni elections and appointments recorded on page 347, other Alumni recently advanced are enumerated below:

WENDELL E. KRAFT'29 as assistant to the president, Trinity College . . . KENNETH G. BUCKLIN'30 as manager of engineering receiving tube operations, Electron Tube Division, Radio Corporation of America . . . RICHARD S. HUESTED'32 as manager of operations, Aviation Gas Turbine Division, Westinghouse Electric Corporation.

ALFRED G. PAYNE'33 as manager of design engineering, Plastics Division, Monsanto Chemical Company . . . GEORGE H. PRIGGEN, JR.'34 as assistant division manager, Southern Zone, Eagle Division, Socony Mobil Oil Company . . . FRANCIS H. LESSARD'36 as contracting manager, Boston Office, Bethlehem Steel Company.

CHARLES W. CORNFORTH'37 as assistant industrial relations manager, Electric Department, Public Service Electric and Gas Company, Newark, N. J. . . . JOHN P. MATHER'37 as production engineer, Graphic Arts Group, Sun Chemical Corporation . . . GEORGE R. WEPPLER'37 as a director, Park City Hospital, Bridgeport, Conn. . . .

W. ROBERT HYDEMAN'39 as manager of computer systems, Touche, Niven, Bailey, and Smart, Detroit, Mich. . . . MARK G. MAGNUSON, JR.'39 as southeastern district sales manager, Titanium Pigment Corporation . . . HUMBERT P. PACINI'39 as associate director, Division for Technical Operations, Allen B. Du Mont Laboratories.

SHERMAN E. CRITES'41 as manager of marketing, Small Aircraft Engine Department, General Electric Company . . . REX B. BEISEL, JR.'42 as assistant to the general manager, Geometric-Horton Division, United-Greenfield Corporation, New Haven, Conn. . . . CHARLES F. CHUBB, JR.'43 as engineering department head, Naval Armament Systems, Surface Armament Division, Sperry Gyroscope Corporation.

GWYNN H. ROBINSON'43 as assistant to the vice-president and general manager, Northrop International Division, Northrop Aircraft, Inc. . . . MARTIN B. JUDGE'47 as production and engineering manager, Electronic Chemicals Division, Cherokee Chemical Company, Danville, Pa. . . . ARTHUR SCHWARTZ'47 as general manager, Kleen-Stik Products, Inc., of California.

ABRAHAM I. DRANETZ'48 as vice-president, Gulton Industries, Inc., Hyanis, Mass. . . . JOSEPH C. FANTONE, JR.'48 as chief equipment engineer, Hartford Works, Underwood Corporation . . . LOUIS J. TEDESCHI'51 as chief, Fighter-Bomber Section, Flight Control Laboratory, Wright Air Development Center, Dayton, Ohio.

CONRAD J. HEMOND, JR.'52 as acting director, Division of Engineering, Hillyer College, University of Hartford . . . DAVID S. GREENLAW'57 as assistant technical adviser to the general manager of Kodak Park, Eastman Kodak Company.

Hot off the Press . . .

Flickering Flames, A History of Domestic Lighting was written by LEROY L. THWING'03 and sponsored by the Rushlight Club, a group of old lamp collectors in Boston. (Rutland, Vt.: Charles E. Tuttle and Company, 1958.)

A 10-year study by the research committee of the Federation of Paint and Varnish Production Clubs led to *Film Formation, Film Properties, and Film Deterioration*, of which CHARLES R. BRADON'07 is technical editor. (New York: Interscience Publishers, 1958, 422 pages, \$9.75.)

After two years and 23,000 miles pursuing tales of flying saucers, Austin B.'16 and HELEN REEVE present findings in *Flying Saucer Pilgrimage*. (Amherst, Wis.: Amherst Press.)

A popular book on artificial satellites is *Around the World in Ninety Minutes* by DAVID O. WOODBURY'21. (New York: Harcourt, Brace, and Company, 1958, 248 pages, \$5.75.)

MARTIN J. BUERGER'24 and LEONID V. AZAROFF'54 are coauthors of *The Powder Method in X-Ray Crystallography*. (New York: McGraw-Hill Book Company, Inc., 1958, 327 pages, \$8.75.)

Including material by 22 specialists, *Ceramic Fabrication Processes*, edited by WILLIAM D. KINGERY'48, covers the range of current and potential developments, combining traditional and modern processes for the first time. (New York: The Technology Press of M.I.T. and John Wiley and Sons, Inc., 1958, 235 pages, \$9.50.)

Happy Birthday . . .

Among the Alumni to whom birthday congratulations are appropriate during this month are three due to celebrate their 90th anniversaries, six their 85th, and four their 80th, namely:

May, 1868—FREDERICK M. MANN'94 on the 1st; WILLIAM G. CURTIS'90 on the 6th; and THOMAS N. CODMAN'90 on the 17th.

May, 1873—EDMUND I. LEEDS'93 on the 6th; ROBERT W. CARR'95 on the 16th; WILLIAM J. BRICKLEY'01 on the 18th; GEORGE TAYLOR'94 on the 24th; RITTENHOUSE R. MOORE'95 on the 26th; and HAROLD W. DELONG'96 on the 30th.

May, 1878—ARTHUR C. DAVIS'01 on the 9th; EDWARD B. BELCHER'01 on the 15th; MILTON W. HOGLE'01 on the 22d; and WARREN A. EDSON'00 on the 24th.

With these additions, the rolls of the Alumni Association will include 65 non-agenarians and 684 octogenarians.

Obituary

T. HARRIS BARTLETT'84, 1950
MARTIN O. SOUTHWORTH'90, March 20, 1957

FRANK E. NEWMAN'92, October°
LAMBERT N. WHITNEY'96, March 23
LEWIS J. SEIDENSTICKER'98, March 20
WILLIAM R. STRICKLAND'98, February 16 (corrected date)

GEORGE H. PERKINS'99, March 9°
LEWIS A. MILLER'00, December 23°
THOMAS D. PERRY'00, March 10°
WILLIAM J. MIXTER'02, March 17
FRANKLIN T. ROOT'02, September 9°
RAYMOND E. HANSON'03, March 28
WILLIAM B. FOGARTY'04, April 29, 1957°
LILLIAN M. TOWNE'04, February 24°
FRANCIS M. HILL'05, January 31°
CHARLES E. LEAVITT'05, March 4
HAROLD C. MITCHELL'05, March 6°
RAY S. HOYT'06, March 16

EDWARD L. MAYBERRY'06, October 23°
HAROLD K. MERROW'06, August 28°
CHARLES H. SHAPLEIGH'06, March 15
M. GENEVIEVE BOLAND'07, March 21
GEORGE A. CRANE'07, March 6°
WILLIAM A. STOCKING'08, May 8, 1957
ABBOT H. THOMPSON'08, February 26
WILLIAM F. GILMAN'09, February 17°
ERNEST M. LORING'09, February 18°
FRANK E. HODGES'10, March 10

EDWIN F. STIMPSON'11, February 18°
PETER C. LIEBER'13, November 20°
CARL N. ANDERSON'14, September 15°
PAUL W. SHEDD'14, January 13°
ANGUS V. A. SWIFT'14, March 26
BENJAMIN L. JOHNSON'15, November 6
HORACE C. BURNHAM'16, March 14
WALTER G. GOODWIN'16, March 24
MURRAY G. GRAFF'16, March 3°

PAUL E. BLANCHFIELD'18, February 27
THOMAS M. GIBBONS'18, March 18
KENNETH S. M. DAVIDSON'19, March 19
MAURICE A. MICHAELS'19, January 18
FREDERICK A. PARKER'19, December 21
ROBERT K. THULMAN'22, February 18°
WALTER S. ANDERSON'23, March 6
MALCOLM JOHNSON'23, February 27°
LESLIE B. SANDERS, JR.'23, February 23°

GUY C. ROGERS'24, January 28°
CARLOS F. FERRE'28, March 20
THOMAS E. GUERIN'28, February 13°
RADU I. HURMUZESCU'28, January 31°
ROBERT L. JONES, 2d,'28, March 14
JAMES L. PONTZ'28, July 20, 1957°
JOSEPH J. ANASTASI'30, December 29°
IRVIN R. MITCHELL'30, February 5
ROBERT O. ANDREANI'31, January 15°
DONALD D. SWIFT'32, March 7
GEORGE B. HARVEY, JR.'34, March 21, 1950°

ANDRE L. JORISSEN'36, February 27
GORDON C. SEAVEY'39, February 19
ROBERT L. HIBBARD'45, January
JOHN H. ZELL'46, January 5°
JOHN J. BENJAMIN'48, February 1°
PRESTON A. PADON'48, September, 1955
JOHN A. JACOBSON'50, March 12
MICHAEL G. DYER'53, February 19°
LLOYD ELLISON, 3d, February 23
° Further information in Class Notes

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Fairfield County

Dr. H. Guyford Stever, Associate Dean of Engineering and head of the new special committee on space technology of the National Advisory Committee for Aeronautics, will present a discussion on guided missiles at the Club's dinner meeting at the Clam Box in Westport, Conn., on Wednesday, May 21. Election of officers will also take place. Dinner reservations may be made by writing to the Secretary. — ANTHONY R. SAVINA'30, Secretary, 79 Ledge Lane, Stamford, Conn.

Hartford

The M.I.T. Club of Hartford held its third meeting at the Officers' Club of the Hartford Armory on March 20. Our speaker, Dr. Faulkner, Medical Director of the Institute, presented a very interesting talk relating to preventive medicine. He pointed out the need for a periodic health checkup and the importance of staying slim and trim. In an effort to keep us Tech men living longer, he sighted the four major categories of fatalities where the death rate of men exceeds that of women. Accidents, pneumonia, cancer, and cardiovascular disorders rank as the most important.

Despite the weather, the turnout was indicative of how interested we are in wanting to take better care of ourselves, at least around Hartford.

The officers for 1958 were elected. They are as follows: President, Edward Kane'47; Vice-president, Al Shulman'37; Secretary, Frank Seeley'42; and Treasurer, Lester Smith'50. The two directors elected were as follows: Robert Loomis'46 and Bill Boysen'48. — EDWARD D. KANE'47, Secretary, Cuno Engineering Corporation, South Vine Street, Meriden, Conn.

Monterrey, Mexico

We were expecting the visit of H. E. Lobdell and his wife Conchita as special visitors for March 5; but due to bad weather the plane could not arrive, and therefore the dinner that had been planned had to be canceled. However, on Monday, March 10, an informal lunch was organized at the Casino de Monterrey. Attending were:

Eduardo D. Belden'17; Marcos Manuel Suárez'55; José Vicente Ferrara'54; W. H. Triplett'12; Raúl Sada Rangel'49; Manuel R. Llaguno'46; Yu Kun Pei'43; Rodolfo González Garza'34; Arturo Morales'44, from Mexico City; and Eliot Camarena'44.

For the same Monday night an informal dinner was offered to Mr. and Mrs. Lobdell by a small group of Alumni and their wives. Present were: Juan Celada S.'44,

Ross H. Compton'45, Julio de la Fuente'33, and Eliot Camarena'44. — ELIOT CAMARENA'44, Secretary, Sucursal "J," Monterrey, N. L., Mexico.

New York

An exceptionally interesting Technical Dinner was arranged for March with M.I.T.'s Charles L. Miller'51 as its featured speaker. Professor Miller spoke on "New Approaches to Civil Engineering Problems Through Photogrammetry and Electronic Computers." Ed Edgar'35 acted as moderator of the question and answer period which followed the talk.

The Annual Meeting and election of officers was held at the Biltmore on Thursday, April 24, at which time E. R. Smoley'19 was re-elected as president of the Club. And the following were elected as vice-presidents for the ensuing year: E. C. Edgar'35 as V.P. in charge of membership and publicity; D. K. Finlayson'35 as V.P. in charge of house, budget and planning activities; and A. E. Hitt'36 as V.P. in charge of programming and club utilization. Thornton E. Smith'45 will again be treasurer, and Vernon O. Bowles'33 will be secretary. Three new directors, each of whom will serve for a three-year period, are: T. F. Creamer'40, R. G. Blum'41, and E. S. Goodridge'33.

Class Luncheons are continuing successfully, and fellow Alumni visiting in New York are invited to drop in and say hello; have lunch; or stop by at the cocktail hour and meet with former classmates and friends from M.I.T. (Club rooms are on the first floor of The Biltmore, 43d Street and Madison Avenue.)

And speaking of cocktails, Liz Clark'54 and a committee of five Alumni have been active in promoting very successful parties for the Classes of '50-'57.

On February 2, the Westchester M.I.T. Club group, of which Dave Buchanan'31 is head, sponsored a showing of *The Social Beaver* and a concert by the M.I.T. Concert Band, under the direction of Mr. John Corley. The affair was held at the Edgemont High School, Scarsdale; and Alumni, prospective candidates for M.I.T., and guests in attendance were very much impressed with the remarkable range of abilities demonstrated by the Concert Band. Bill Freeman'42 chairmanned the arrangements. Prior to the Edgemont concert, the band appeared as guest artists on WNYC in a program that was well received by metropolitan newspapers.

At the time of this writing the Long Island Group, of which Harvey Kram'42 is head, released preliminary announcements concerning their Annual Spring Dinner Meeting to be held on May 9. Ed Newdale'48 is chairman for the affair . . . exact time, place, and cost will be announced later, they noted. Dr. Walter Wrigley'34 is to be guest speaker.

The Club's long range planning committee has gone on record with some interesting suggestions for the Club's future.

Our Annual Golf Party will be held at the Scarsdale Golf Club (in Hartsdale, N. Y.) on Tuesday, June 3. A good turnout is expected. Golf, anyone? Gregory Dexter'08 has been doing some monumental work digging out facts and writing up the history of the New York M.I.T. Club since its inception many years ago. This will be published in the near future.

A snowstorm "up to here" necessitated the postponement of our Westchester group's dinner, which had been planned for February. Speaker to be Russell Walters; and his topic, "The Vanguard Satellite Program." The meeting will undoubtedly have been held by the time this goes to press. So, more about it anon!

Membership Card Number 1925 was issued by M.I.T. Club of New York on the day these notes were written up! — ROGER G. BLUM'41, Secretary, 285 Old Colony Road, Hartsdale, N. Y.

Oklahoma

The winter meeting of the M.I.T. Club of Oklahoma was held at the Petroleum Club of Oklahoma City on February 17, 1958. John P. Dowds'51 was appointed assistant secretary for the Oklahoma City group. Dr. James Harlow, Dean of Education at the University of Oklahoma and Executive Vice-president of the Frontiers of Science Foundation, gave an address on the topic "The Problems of Improving Scientific Education." His thought-provoking talk was followed by a lively discussion. A short film on "New Visual Teaching Techniques for High School Physics," prepared under the supervision of Dr. Jerrold Zacharias of M.I.T., was enjoyed at the close of the meeting.

The following M.I.T. Alumni were present: Guy L. Arnold'30, Robert H. Burns'46, Julian M. Busby'45, John P. Dowds'51, Willard A. Emery'21, Paul D. Finefrock'46, Erling O. J. Helland'40, Louise Jordon'31, Herbert Kent'49, Breene M. Kerr'51, Richard Mungen'47, Frank G. Pearce'46, Siegfried E. Penner'45, John A. Reid'50, Roy L. Seikel'47, Henry J. Sherman'51, William J. Sherry'21, Daniel Silverman'29, Robert D. Snow'42, Charles B. Stuart'34, Robert W. Vahlberg'37, and Scott W. Walker'40. — SIEGFRIED E. PENNER'45, Secretary, 2511½ South Boston Place, Tulsa 14, Okla.

Puget Sound

The first 1958 meeting of the M.I.T. Club of Puget Sound was held in the New Washington Hotel in Seattle on March 6. Approximately 60 Alumni, their wives and guests were in attendance. We were most fortunate in having Mr. Donald S. Hostetter, Special Agent in charge of the Seattle F.B.I. office, as our guest speaker. Mr. Hostetter spoke on "The F.B.I. and How It Works." His talk was very informative for all of us and helped to clarify the relationship the F.B.I. has with other federal investigative agencies and

also with the state, county, and local law enforcement groups.

The next meeting will be a dinner meeting with the ladies again invited on May 1 at the Seattle Tennis Club. Our speaker will be Mr. W. E. McKibben, district engineer in charge of the Seattle-Tacoma freeway road project.

This year's slate of officers and committee chairmen is as follows: President, Harry A. Carter'42; First Vice-president and Program Chairman, Russell E. Winslow'40; Second Vice-president and Membership and Publicity Chairman, Richard T. Burke'49; Secretary, Fred I. Fickenwirth'52; and Treasurer and Finance Chairman, Andrew T. Hengesteg'55. — FRED I. FICKENWIRTH'52, *Secretary*, 5020 Baker Avenue, Seattle 7, Wash.

Quebec

The M.I.T. Club of Quebec held a luncheon meeting on January 25, 1958, at the Ritz-Carlton Hotel in Montreal at which the guest of honor was Dr. James R. Killian, Jr., '26, President of M.I.T. and Special Assistant to the President of the United States for Science and Technology. Dr. Killian was introduced by the Right Honorable Clarence D. Howe'07 and thanked by Stewart J. Hungerford'33, Vice-president of the Club. The luncheon was presided over by Henri Audet'45, President of the Club. Dr. Killian gave an account of some aspects of his new assignment in Washington, without forgetting to include also news about recent developments at M.I.T.

During the afternoon following the luncheon, Dr. Killian received an honorary doctor's degree from the University of Montreal and paid a visit to the new building of École Polytechnique on Mount Royal. In the same evening, he was the guest speaker at the annual banquet of the Graduate Society of Polytechnique.

The Alumni and guests attending the luncheon were: Richard Andrews'42, Henri Audet'45, Quentin R. Ball'46, Claude P. Beaubien'34, Norman H. Bell'35, Alain Breton, Thomas L. Brock'38, M. L. Carey'23, C. S. Carter'28, Mr. Cavers, Maxwell C. Coutts'39, L. A. Fraikin'31, F. J. Friedman'08, Henri Gaudet'34, John Gordon German'44, Marc Gilbert'33, David Goldstein'53G, E. N. Gougeon'25, R. Barry Graham'39, R. H. Guthrie'39, E. Roy Hammond'39, Harold Hargreaves'55, David B. Harper'51, W. S. Hart'00, Enrique Ho-Léong'52, Harry Hollander'38, C. D. Howe'07, S. J. Hungerford'33, John S. Keenan'23, Paul Kellogg'11, Bernard R. Lachapelle'55, Emilien Langevin'30, René Laplante'30, Jacques Laurence'40, Florian Leroux'45, Kenneth B. Lucas'32, G. Kenneth Marshall'41, Huet Massue'15, F. David Mathias'36, James F. McKay'49, William J. Milne'51, Sol Nathanson'40, Harold C. Pearson'23, Jean R. Portelance'37, Jean M. Raymond'34, George Alfred Revell'35, Charles A. Robb'10, Ernest Rolland, F. P. Rousseau'27, Maurice Royer'26, Arnold A. Smith'31, A. T. Eric Smith'21, J. N. Stephenson'09, Maurice G. Vézina'57G, H. Ross Wiggs'22, E. L. Williams'34, Raymond Yong'52. — JACQUES R. LAURENCE'40, *Secretary-Treasurer*, 1430 St. Denis Street, Montreal 18, Canada.

Rochester

A new and successful innovation in line of club activities was tried this year. A ski week end planned with some trepidation by Chuck Buik'45 for February 22 succeeded beyond expectations. A group of 45 ski enthusiasts, including club members, their wives and families, enjoyed a highly successful ski excursion to Snow Ridge, N. Y. The enthusiasm was sparked by Chuck Buik; his wife, M. J. Buik, also of the Class of '45; and their four children, including the youngest, aged three and one-half years, who all actively participated in this activity. With such a great start this event may well prove to be an annual function for our Club.

April will be a busy month for the Club. This month will see the culmination of our Education Council activities when the Scholarship Committee, together with a representative from the Institute Student Aid Office, will interview area applicants to M.I.T. for the fall of 1958. Plans for an educational conference have come to fruition with an evening meeting on the topic "Science Education in Secondary Schools." Keynote of this meeting will be a report on the work of the Physical Science Study Committee by two members of this Committee from Cambridge. Through our Educational Counselors, the Club is inviting as its guests principals, guidance counselors, and science teachers from 30 of our area high schools. One of the area high schools has already planned to offer the new physics course developed by the Physical Science Study Committee to one of its senior year physics sections. — JAMES K. LITTRWITZ'42, *Secretary*, 191 Rogers Parkway, Rochester 17, N. Y.

Southern California

On January 21, 1958, the annual meeting of the M.I.T. Club of Southern California was held at the University Club in Los Angeles.

The featured address by Dr. Kenneth C. Reynolds'25 and Mrs. Reynolds was both fascinating and enlightening. Dr. and Mrs. Reynolds, aided by colored slides, spoke about Mesopotamia, its people and its customs. Dr. Reynolds, 24 years a member of the M.I.T. Faculty and now a department head at the University of Southern California, was at one time a Fulbright professor at the College of Engineering in Bagdad.

One of the high lights of the meeting was the announcement and installation of club officers and governors for 1958. Spirited Bob Welles, Class of 1915, succeeded the capable Jim Cullison'41 as club President. The following people rounded out the slate of officers for this year: Jay Zeamer'40, First Vice-president; Richard DeWolfe'36, Second Vice-president; Andrew Kay'40, Regional Chairman; Joseph Marshall'53, Secretary; David Long'51, Assistant Secretary; T. Gary Loomis'44, Treasurer; Hiram Beebe'40, Archivist and Register; James T. Holmes'14, Governor at Large; Ray Stringfield'15, Governor at Large; William MacCallum'24, Governor at Large; Philip Bates'24, Governor at Large; George Cunningham'27, Classes '23-'27; Dean Batchelder'28, Classes '28-

32; Page Golsan, Jr., '34, Classes '33-'37; Harold Strauss'38, Classes '38-42; Lloyd Balsam'44, Classes '43-'47; Jack Mankes'52, Classes '48-'52; Leslie Reynolds'55G, Classes '53-'57.

Homer Davis, last year's efficient treasurer, was elected for another term but was forced to decline the honor because of increased business pressure. Homer is chief design engineer for Mattel, Inc., a toy manufacturer. I guess Homer prefers kids to figures. Gary Loomis, Homer's successor, assured us at the last board of governors meeting that he will stick it out. (Gary's one of those successful Course XV men.)

It was interesting to note in looking over the business addresses of our new officers that "the only loafer in the bunch is President Bob Welles."

Hi Beebe, who has done an excellent job of gathering material for a directory of the 1,600 Alumni residing in the Southern California area, has announced that the directory is about ready to go to press. (However Hi is still encouraging any new requests for ads.) A word of thanks to Tony Thormin'27, who so graciously offered the services of his office and of his secretary during the directory campaign. (Tony's energy makes some of us younger fellows tired just watching him.)

Jay Zeamer still continues to be one of the Club's leading hustlers. In the past year he established an employment referral service which has really caught fire. Anyone interested in receiving information regarding positions in the Southern California area may do so by writing to Jay at the address given below. In his spare time Jay was able to increase the Club membership by 10 per cent over that of the year before.

The International Geophysical Year will continue to be the featured topic for club meetings in the months ahead. With Jay Zeamer in charge, we look forward to some entertaining evenings.

The board of governors monthly meetings will again be held on the third Monday of each month at the Los Angeles Chamber of Commerce Building. Any Alumni visiting the Los Angeles area are cordially invited to attend these meetings whenever possible.

Among those present at the annual meeting were: John Anson'50; Dean Batchelder'28; Hiram Beebe'10; Thomas Chang'37; Ben Ciscel'47; Bernard Coleman'19; James Cullison'41; Homer S. Davis'24; Richard DeWolfe'36; John Ford'38; Abraham Gammal'51; Robert Huxtable'45; Andy Kay'40; Thomas George'33; Eli Grossman'36; Robert Gordon'39; Phil Herrick'24; James Holmes'14; Guy Inshaw'51; Charles Keevil'23; Scott Libbey'43; Henry Lippitt'36; Gary Loomis'44; Sam Lunden'21; R. H. McFee'37; Alvin Markus'44; William Mahlman'48; Harvey Pardee'09; Leslie Reynolds'55G; Philip Robinson'26; Frank Reeves'24; Harry Rollins'04; A. J. Romano'50; Dr. R. E. Staff'42; Harold Strauss'38; Raymond Stringfield'15; Robert Welles'15; L. S. Wyler'42; Tony Thormin'27; Jay Zeamer'40; and the speakers, Dr. and Mrs. Kenneth Reynolds'25. — JOSEPH W. MARSHALL'53, *Secretary*, 904 West Hyde Park Boulevard, Inglewood, Calif. DAVID

Washington

Washington's first M.I.T. Regional Conference took place March 1 and was a great success. A near capacity attendance of several hundred gathered at the Shoreham Hotel, and included many distinguished guests from high government circles — generals, admirals, senators, representatives, and holders of other high administrative posts. M.I.T.'s Dr. James Killian, now in Washington as the President's special assistant for Science and Technology, was able to get away from his pressing duties long enough to join us at the luncheon and dinner, where he and Dr. Stratton both delivered remarks on the state of affairs in science and technology. At luncheon, we were privileged to hear from Sir Robert Watson-Watt, "father of radar," who gave us some very interesting glimpses of the trials and tribulations of the early days when Radar was first being developed and fighting for acceptance by the government and the military bureaus. The rest of the day's program consisted of four very excellent talks by M.I.T. faculty members: Dean Harrison on "What's Ahead for Science?"; Dr. Livingstone, "Beyond Nuclear Physics"; Dr. Schmitt, "New Frontiers in Molecular Biology"; and Dr. Little on "Twentieth Century Physics in the High School."

Thanks go to the hard-working committee which arranged for this successful conference: Chairman, Thomas K. Meloy '17; Vice-chairman, Robert W. Blake '41; Steering Committee, J. Raymond Berry '52, C. Ford Blanchard '22, Charles S. Butt, Jr., '41, Francis V. duPont '17, Chester N. Hasert '41, Broderick Haskell '22, Arthur H. Heinzman '52, William C. Howlett '49, Michael K. Johns '53, F. Charles Moesel '40, Thornton Owen '26, Joseph E. Rehler '30, Paul M. Robinson, Jr., '44, Arch C. Scurlock '43, Howard K. Smead '51, Nicholas P. Stathis '29, Adam K. Stricker, Jr., '29, and Adolphe H. Wenzell '17. And it was a financial success too!

Our next meeting will be Thursday, May 22, at the Cosmos Club, 2121 Massachusetts Avenue, Northwest, at 6:30 P.M. Social hour first and dinner at 7:00 P.M. This will be Ladies' night, so bring your wife, daughter, mother, or friend. This is also election night, but we promise to keep the business session brief.

We regret to report the death of one of the Club's stalwart supporters, Robert K. Thulman '22. He was past President of the M.I.T. Club of Washington, honorary secretary of the Institute for 20 years, a member of the M.I.T. Scholarship Committee, and chairman of the Washington Regatta Committee, in addition to many other civic and professional activities. — CHESTER N. HASERT '41, *Review Secretary*, 2475 Virginia Avenue Northwest, Washington 7, D. C.

CLASS NOTES

1891

The Alumni Day for all Technology comes this year on Monday, June 16; this

is a kind of "must day" for all of us who can make it. And it is most alluring, too. All of us on that wonderful campus for lunch — is there another just like it on this continent? And in the evening the banquet with Boston Pops in Kresge. Does not that sound good to you fellows far from Boston? Why not try it again this year?

Our class dinner will be held this year on Alumni Day itself, Monday, June 16. We will eat at one o'clock at the central quadrangle of Tech. Do come if you can!

The following story appeared in the *Worcester, Mass., Daily Telegram* on January 3 last: "Professor and Mrs. Carleton A. Read of 15 Hackfeld Road will celebrate their 64th wedding anniversary today. Professor Read is professor emeritus of Worcester Polytechnic Institute, where he taught mechanical engineering for 25 years.

"The couple were married January 23, 1894, in the Woburn home of the bride's uncle, the late Reverend William C. Barrows, minister of the First Baptist Church in Woburn. The bridegroom's uncle, the late Reverend Andrew Read, assisted. The bride was the former Abbie Creech. They have three children, Mrs. Earle P. Chase of Somerset, Mrs. Eleanor A. Madison of Boston, and Lawrence M. Read of Bay-side, Long Island, N. Y.; three grandchildren; and five great-grandchildren.

"A graduate of Massachusetts Institute of Technology, Boston, Professor Read taught at the Institute for four years, after which he taught at the University of New Hampshire, Durham, for nine years."

Carleton graduated with our Class in '91 and received his S.B. in Engineering. No man among us has been more faithful and loyal to the Class for so these many years. This writeup in the *Telegram* is well merited, and something of which Carleton and his lady have just reason to be proud. And we, his classmates, take real pleasure in adding our congratulations and affectionate regards.

Louis A. Simon, the artist, has resided in Washington for many years. Now he has changed his home, and the new address is: The Kennedy-Warren, 3133 Connecticut Avenue, Washington 8, D. C. We all of us send our best respects to him and to his wife, Teresa. And Louis assures me that the latchstring is still out for all '91 fellows.

And lastly, I hope I'll be seeing you next month on June 16; till then, may the best of health and spirits be yours. Affectionately, WILLIAM CHANNING BROWN, *Secretary*, 36 Foster Street, Littleton, Mass.

1892

It is the sad duty of the Secretary to report the death of another of our classmates, Frank E. Newman, at his home in Plainfield, N. J., in October 1957. Newman received an S.B. in Course IV and has been registered with our Class ever since graduation. I have no record of his career and would appreciate it if any of our classmates can furnish any information.

Hope that as many of our classmates as may be able to will plan to attend the Alumni Day celebration next June 16.

1894

The most important item of news that the Secretary has to offer at this time is the pleasing information that Howard R. Barton has expressed his wish to be classified with the Class of '94, with which he actually graduated. Having entered with the class of '93, Howard was for four years more closely associated with the men of that Class than with '94 men; but in his fifth year he formed many friendships with our classmates. We welcome his return to the fold.

Howard has had an interesting career. For 17 years he was with the Long Island Lighting Co., in charge of the design and construction of power plants, and was retired in 1941 having reached the age limits in that company. Being active and unwilling to give up professional work, he moved to Connecticut and joined a firm of engineers as a consultant. The attack on Pearl Harbor came almost immediately, and he was kept very busy in war work. After the war a stretch of illness came, remedied by an operation; and good health has been his good fortune since that time. Howard is a man who has hobbies, especially genealogy and photography; but he has also done weaving as an indoor sport, as one may say. Like your Secretary, he believes every man should have some hobby or inner resource to which he can turn as age comes upon us. Now he also has a garden to occupy his energies.

Howard's wife had the misfortune to break a hip five years ago, and has been invalided since that accident. A devoted daughter keeps house for her parents. A son and five grandchildren live in Illinois.

Your Secretary has again been elected chairman of the board of governors of the Refrigeration Research Foundation, a position he has held ever since the Foundation was set up in 1943. This has been one of the things that has kept up his deep interest in food technology, another being his almost daily attendance at his private room in the Food Technology Department at M.I.T. The wonderful consideration with which he has been treated is almost beyond belief.

It is with deep gratitude that the Secretary wishes to acknowledge the many messages of sympathy from classmates as a result of his loss of a greatly beloved life companion who had made his life happy for 48 years. — SAMUEL C. PRESCOTT, *Secretary*, Room 16-317, M.I.T., Cambridge 39, Mass.

1896

Will Coolidge is still interested in a class meeting at a dinner for members only. He writes: "Just leaving February 2 for two or three months in Spain and the Canary Islands. Will try to come to reunion wherever and whenever." Unfortunately, there are not enough members with his stamina and enthusiasm who have expressed similar sentiments to warrant setting a time and place for such a dinner. The class constitution provides that the secretary shall send notices of regular

(annual) meetings to all members at least two weeks in advance of said meetings; it also says that the official organ of the Class shall be the Technology Review. Notice: the regular meeting of the Class shall be at the Institute on June 16 next.

The last item for this column now at hand is the following letter from Charlie Trout: "To start at the beginning, I was born 100 miles north of Toronto in a log house (not a log cabin) that my father built alongside of his saw mill when he was contemplating marriage. Nothing else important happened to me for the next 20 years until I entered M.I.T. from Chicago. During my vacations at Tech, I worked for the Boston Sewer Department as a member of a surveying party laying out sewers and things. During school terms when the folks in charge of the Sewer Department were busy and working nights they sometimes called on me to help out. It helped, as times were hard, so hard that the Institute took my note for part of the tuition. On graduation I continued with the Sewer Department at the Moon Island disposal works. There I got my first consulting job, helping the contractor design a dump track railroad.

"My work at Moon Island was the beginning of a life of waterfront engineering. From Moon Island to the Brooklyn Navy Yard to the New York Dock Department, where I started as a topographical draftsman and ended as division engineer in charge of surveying and dredging. During the first world war I was in charge of design and construction of four large piers, three of them with storage sheds, at the South Brooklyn Army Supply Base. Here I had two general foremen; one, a very large redheaded man with very large feet and a huge red moustache; the other, so small that he was called Little Johnnie. One day the big man came on the job without his moustache. Johnnie pretended not to notice, then looked him up and down and said: 'If you want to disguise yourself, you'll have to cut off them feet.' Between the wars I did consulting work and worked for waterfront contractors. I had some very interesting work, but it ended when I became eastern manager of the Great Lakes Dredge and Dock Co. A bit later I became vice-president.

"The second world war came on, and I was as busy as I have ever been. Our firm, with another contractor, built the Bayonne Dry Dock and Ship Yard. This was a hurry-up job to get the dock ready for the battleship *Iowa*, then nearing completion. We made it. We also did the dredging for a new dry dock at the Brooklyn Navy Yard and many smaller, but still large jobs, including dredging for a project at Trinidad, British West Indies. During the war I gave up my consulting work and devoted all my time to the Great Lakes Dredge and Dock Co. After my retirement in 1954, I had some thought of taking it up again; but a stroke that the doctor says was not much of a stroke made me change my mind.

"Now at 86 I help around the house a bit and let it go at that. Ever since I came to New York, I have been very interested in the American Society of Civil Engineers. I have served on many committees, have been a director, and am now

its treasurer. Our Class has reason to be proud of the work of its members in the A.S.C.E.: five directors, a vice-president, and two honorary members." — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline 46, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline 46, Mass.

1897

Your Secretary hopes that many of the Class from far and near will be present on Alumni Day, which comes this year on Monday, June 16. The festivities will all be on campus again, with a concert by the Boston Pops Orchestra in the evening. Further details are doubtless given in this issue of *The Review*.

Those who attended our 60th reunion will recall the presence of Judge Charles Dunn on that occasion, and that he added much to our enjoyment. During our absence in the South a copy of the January 14 issue of the *Lock Haven* (Pa.) *Express* was received here but was not forwarded to me. It contained the news of his sudden bereavement, and our deep sympathy goes to him accordingly.

"Judge Dunn's Wife Dies at 88 — Suffered a Sudden Coronary Attack. Mrs. Dorothy Dodd Dunn, 88, wife of former Associate Judge Charles Dunn, died suddenly at 6:45 A.M. today at her home, 252 West Water Street.

"Mrs. Dunn had been in good health for her years until January 2, when she had a fall. She had been spending much of her time in bed since then, recuperating from complicating illness. Judge Dunn talked to her this morning, and had propped her more comfortably against her pillow, as she wished, when she suffered a coronary embolism and died within a few minutes.

"Mrs. Dunn was a native of Wyoming, Ohio, near Cincinnati, and visited Lock Haven as a young woman with classmates attending Wilson College. She met and married Rush Petrikin of this city, and they resided in New York City at the time of his death.

"She had made her home in Lock Haven since 1918, and married Judge Dunn 30 years ago. She was an active member of the Christian Science Church. Mrs. Dunn is survived by her husband; a daughter, Miss Lois A. Dunn, who is in charge of the student infirmary at Dartmouth College; and four nieces and nephews, Emily Gedge, Helen and John Knight of Wyoming, Ohio, and Mrs. Harold Hoffman of Hudson, Ohio." — JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1899

In the death of Miles Standish Richmond on December 23, 1957, the Class lost a most loyal and lovable member. Upon graduation he worked for a year with Shepley, Rutan, and Coolidge, Architects. For a few years thereafter he was with Bradley and Chapman, where he designed and superintended building Workmen's Housings at Sanford Mills, Maine, and other places. If my memory is correct, he felt it his duty during this period to carry on simultaneously the

family export business. Later he had his own architectural business in Boston. There he made a notable reputation for himself in restoring and modernizing old colonial houses of New England. His talent lay in bringing them back to their original type without destroying their intrinsic beauty. For example, he bought and restored one of the town of Marshfield's many fine old houses, which he sold to President Emeritus Daniel L. Marsh of Boston University as a residence. This residence became one of the show houses of the town. It not only enhanced Miles's reputation as an architect, but added greatly to the prestige of Marshfield.

Miles was a charter member and founder of the Leyden Congregational Church in Brookline. When in 1949 he designed and built his home in Little Compton, R. I., he identified himself closely with the United Congregational Church there by becoming clerk and deacon. The following is quoted from a church bulletin in memory of him: "We shall always think of him here in the Church as the architect who designed the present front interior of our sanctuary in 1940. While this platform is given to the Church in memory of Isaac Bailey Richmond, his grandfather, it will awaken in us memories, too, of its skillful designer. Mr. Richmond also superintended the rebuilding of the steeple in 1938. He designed the present Communion table. Mr. Richmond's talents were manifold. As church clerk he attended assiduously to our meetings and records for three years. In the same period he was a loyal and devoted deacon. He was the mainstay of the tenor section of our choir. Beyond all this, Mr. Richmond endeared himself to us as a Christian gentleman, whose thoughtful courtesy and alert kindness to each of us as we needed them were very close to a model for us all. Our memory of him will be forever green."

Miles not only restored the steeple, following the 1938 hurricane, but he also wrote a poem, which was published in the preface to the Anniversary History of the Church in 1954. The lines of the poem were inspired by the fact that the steeple is used as a point to steer by among the ships of our Navy. This poem, entitled "Our Steeple," is as follows:

"As a beacon stands our steeple, for the ships at sea./ May it also call Thy people far and near to Thee./ Standing white and pointing upward, up to Thee above./ As a symbol through the ages of our faith, Thy love./ Winds and storms at times surround it, and the world seems drear./ Through the clouds come sunshine, always Thou art near./ From the Architect in Heaven beauty comes below./ May we follow in his footsteps, spread it where we go./ Memories of those before us, of their deeds well done./ Ever are an inspiration, spur us on and on./ With Thy help we'll keep on building for Thy Church today./ And for future generations guide us well, we pray."

Miles was a major in the Officer Reserve Corps and during his time helped design the mess hall for the camp in Rhode Island. This plan was adopted by the Army for all their camps. He re-

ceived an honorable discharge in 1954. He was also master of the Brookline Chapter of Masons. He is survived by a brother, Winthrop C. Richmond, and by one nephew and several cousins. — MILES STANDISH SHERRILL.

Your Secretary arrived in Saint Petersburg, Fla., on February 8. My sister's house, recently built, is on a peninsula, with the bay both front and back. Egrets, flamingos, gulls, quail, and cranes surround me when I am outdoors. Temperatures have ranged from 30° F. when I first came to 75° F. when this is written. I am thankful to have escaped the blizzard in the Northeast.

Soon after arrival I called up Ed Packard's house in Gulfport. I was sorry to learn that he had had a shock in December, followed by another in January, and was in the hospital. At last reports (March) the paralysis in one arm and leg was subsiding somewhat, and he hoped to be able to return to his home — 1413-59th Street, South Gulfport 7, Fla. Cards sent to that address will, I know, be much appreciated.

Soon after I came here, a stranger appeared at the door. I could not identify him at first but soon discovered he was Philip Burgess of Columbus, Ohio. He was one of the first to graduate in the Sanitary Engineering Course. We had many things to reminisce about, since he was a sanitary engineer in the Ohio State Health Department at the time when I was in charge of that department's chemical and bacteriological laboratories.

Edward Everett Pierce, who commuted from Malden, as I did, during our student days, now lives in Saint Pete. He and a number of other naval engineers have occasional meetings at the Wedgewood Inn here. At the one I attended were Binley '97, Hewins '98, Clary '96, and Pierce. — BURT R. RICKARDS.

On receiving the list of the living members of '99, it was interesting to note that it contained 99 names, averaging 80 years of age. By courses: I-11; II-18; III-1; IV-18; V-11; VI-16; VII-6; VIII-1; IX-1; X-2; XI-1; XII-1; XIII-5; 0-7. Burt Rickards is in Florida, also seven others of the Class. To assist in the preparations for Alumni Day, June 16, and for the 60th in '59, please forget your modesty and send in some snapshots of yourself, your family and interests; and a sketch of your life since 1899 — vocations, avocations, hobbies, memberships, family, and so forth.

George Hawthorne Perkins, B.S. II, died in Salem, Mass., on March 9, 1958, 80 years old. He was on the faculty of the Lowell Textile Institute for many years. In 1919 he opened an office in Boston as a construction engineer and remained there until his retirement in 1956. George was former chairman of the Textile Division of the American Society of Mechanical Engineers; an active member of the Salem Marine Society and the Essex Institute; a former member of the Corinthian Yacht Club, Salem Country Club, and the Boston City Club. He leaves a son, John J. Perkins of South Hamilton; a daughter, Mrs. Lawrence R. Leach of Old Greenwich, Conn.; a brother, the Reverend Dr. Pal-

frey Perkins, minister-emeritus of King's Chapel, Boston; a sister, Miss Charlotte Perkins of Weston; and six grandchildren. — PERCY W. WITHERELL, Assistant Secretary, 84 Prince Street, Jamaica Plain 30, Mass. BURT R. RICKARDS, Secretary, 349 West Emerson Street, Melrose 76, Mass.

1900

Remember our reunion at The Pines, Cotuit, Mass., on June 17 to 19, following Alumni Day at Cambridge. Come if you can.

Thomas Doane Perry died March 10, 1958. He had been hit by a truck somewhat over a year ago and apparently never recovered completely from the accident. His wife, who was walking with him at the time and was also seriously injured, has, we are happy to say, made a remarkable recovery and is quite well. Tom has lived for many years in Moorestown, N. J.; and although he retired in 1947, he has since then continued his consulting services on woodwork and particularly on plywood. He has been considered one of the leading authorities of the country on this subject.

Tom came to us from Crete, Neb., where he graduated from Doane College in 1897. He was always proud of his connection with Doane College and justifiably so, for it was founded by his grandfather, Thomas Doane, and his own father, David B. Perry, was its president. Tom himself was a trustee of the college for many years and had completed a history of the college which has been published by the college. Entering M.I.T. in 1897, he identified himself with our Class and graduated with us from the Mechanical Engineering Course. After graduation he spent two years with the Library Bureau in Boston. Then for four years he was superintendent of the Printing Department of Macey Co. of Grand Rapids, Mich. Leaving them in 1906, he became the secretary and business manager of the Board of Education of Grand Rapids. In 1911 he left this board to become vice-president and manager of the Grand Rapids Veneer Works. He remained with this company for a number of years, leaving about 1925 to become consulting engineer for Bigelow, Kent, Willard, and Co. of Boston. In 1929 he went to the New Albany Veneering Co., New Albany, Ind., where he remained for about seven years. During this time he was chairman of the Cost Committee for the Industry of Woodworking of the National Recovery Administration. In 1936 he went to the Resinous Products and Chemical Co. of Philadelphia, Pa., where he remained until his retirement in 1947. In addition to his regular company work, Tom had many wider interests. He was a fellow of the American Society of Mechanical Engineers. He wrote the Woodworking section of Kent's *Mechanical Engineers Handbook*. He wrote a book on *Modern Plywood*. He was chief consultant of the staff of the Museum of Science and Industry of Chicago. He lectured in colleges, including M.I.T., and was engaged in much consulting work.

As a hobby, Tom was an enthusiastic philatelist, going into this with the enthu-

siasm and thoroughness that characterized all his work. He published a *Guide to the Stamped Envelopes and Wrappers of the U.S.A.* and accumulated a fine collection of stamps. Tom leaves his wife, three children, and eight grandchildren. His children are: a son, Bretton, M.I.T. '33, who is equipment engineer with the American Can Co.; a son, Thomas Doane, Jr., Yale '35, now business manager for the Boston Symphony Orchestra; and a daughter, Frances, whose husband, Dr. Frank F. Ferguson, is connected with the Portland (Maine) General Hospital. Tom has always been a joy to the class secretaries, as he wrote to them frequently and kept them informed of his changes and work. The resulting stories in past class notes have made possible this brief account of his busy and successful life. "This is Your Life, Tom Perry!"

We have received word that Lewis A. Miller died on December 23, 1957. After graduation and until his retirement Lewis was with the Pennsylvania Railroad. Much of his work was, we believe on bridge design. He lived in Moylan, Pa. — ELBERT G. ALLEN, Secretary, 11 Richfield Road, West Newton 65, Mass.

1901

I have to date (March 12) received 17 replies to the Class Letter. I realize that at our age it is not easy to send interesting news, but do the best that you can. Your everyday doings are eagerly read by your classmates. I will quote from some of the replies. Ed Church, XIII, in Elmira, N. Y., writes: "I sympathize very much with you in the matter of difficulties in getting items of 1901 class news and wish I could help. The fact is that I have dug up everything that I thought had a chance of being interesting. Then, in response to later calls, I wrote again, mostly about the difficulty of making commonplace doings into something of general interest. Now, as nothing new has happened to me, I might write about news that was probably not of great interest to class members in the first place. I am retired, am not engaged in any especial substitute occupation or hobby, keep fairly well and comfortable and help my family to do so. However, one cannot be entirely relaxed in the cockeyed world that surrounds us just now, but he can try and hope that all skyrockets (except ours) will fizzle. I believe I wrote before that I might get to a '59 reunion, but it was not probable. I agree that there will probably be fewer physically able to make the date in '61 and cannot myself promise to attend at that time, but hope to do so."

From Dave Cowell, VI, Hingham, Mass.: "Busy as can be with genealogy; two grandsons, 13 and 15; odds and ends about the place; keeping that part of my family in the service up to date on home happenings; poring over the Record Commissioners' reports of Boston from 1630 to 1800. Had a birthday party January 7, my 80th. That's about all." Angus MacInnes, I, of Port Washington, N. Y., simply reports that he is retired. Dennis Haley, III, New York City, says: "Am still very active in my profession, mostly as a consultant, but also do some field work. Last summer decided to take three months off and satisfy my wife's longing to see Europe. The

trip was a great success. The only trouble is that it whetted her appetite for more of the same. So will cover more 'water front' this summer." Ed Fleming, III, from Los Angeles, Calif., reports: "Am still retained as a part-time consultant by American Smelting and Refining Co., this being the 52d year of my association with that company. Also do some consulting work for other firms and have just returned from a trip to Alberta. This was in connection with the removal of hydrogen sulphide from natural gas prior to its entrance into the trans-Canadian pipe line."

My appreciation for the contributions to the class fund which some of you have sent in. Keep in mind our reunion in '59 at Dedham, Mass., and let Bob Derby know if you have any ideas. Also show your appreciation for the work our Class Agent, Ed Davis, is doing in trying to boost our contribution to the Alumni Fund. If any of you wish to write to Mrs. Peterson, and I know that she would welcome your letters, her address is Mrs. Guy C. Peterson, 788 Riverside Drive, New York 32, N. Y. — THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N. H. WILLARD W. Dow, *Assistant Secretary*, 78 Elm Street, Cohasset, Mass.

1902

A letter from Mrs. James W. Halley, Chesterton, Ind., tells that her father, John M. Fitzgerald, died on November 19, 1957, after about six weeks of illness. He had suffered a series of strokes but rallied very well and insisted on going to his office until a short time before his death. At the time of his death he was president of the Aldobilt Company, Chicago. He is survived by his wife and Mrs. Halley, their only child. It is learned by a notice from the Alumni Office that Franklin T. Root, Course X, died on September 9, 1957. So far as our records show, he had for many years been in the textile publishing business in New York.

Dan Patch became a member of the octogenarians on the 10th of March. Will others in that group please send in their names? Alumni Day this year falls on June 16 and will be, as last year, entirely on the campus; the day will wind up with a Pops Concert in the evening in the Kresge Auditorium. Don't miss attending if possible to be there. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

1903

Our 55th reunion! A last reminder to confirm your reservations for lodgings and the class dinner, Saturday evening, June 14, at Burton House, 420 Memorial Drive, Cambridge, Mass.; also for Alumni Day activities, Monday, June 16, including Boston Pops in the evening. For those of us around Southern California who feel unable to come east, Walter H. Adams is trying to arrange for a dinner in Los Angeles. Write to him for particulars at 1633 Ard Eevin Avenue, Glendale 2, Calif., or telephone Citrus 1-4647. Hewitt Crosby also expects to be in California about that time. Joyce has reservations on the *Britannic* for a trip to England: Bon Voyage! W. M. Gilker, Dallas, Texas, is planning

to attend the wedding of his grandson, Charles Webb, June 21. He has our best wishes for a happy occasion. W. C. Lounsbury is celebrating his 50th wedding anniversary with five children and fifteen grandchildren, at Madison, Wis. We extend felicitations. Arthur B. Allen, since his retirement from the gas engineering field, is enjoying life at Cranford, N. J. He hopes to see many of us in June.

Leroy L. Thwing has favored us with an interesting account of his doings, as follows: "Some time ago Gilbert H. Gleason urged us all or 'most of us' to tell the story of our lives, even if we had little to boast about. This makes it easier. Most success stories start — or used to — with the graduate in a lowly position; then, the next we hear, he is assistant to the president of the company. We are never told how he got there. I will have no difficulty myself in explaining this, as I never got anywhere special. But I am still here and I am enjoying life, which is something. Also I have just had a book published. Henry David Thoreau said that if a man does not keep step with his fellows, perhaps it is because he listens to a different drum. I have indeed listened to a lot of different drums. From 1903 to 1913 I worked in machine shops and sold machine tools. In 1915 I married Edna Wilson. This was, and is, the best thing I ever did. After this I appraised factories and machine shops for a few years. But being away from home so much was not my idea of living. So I quit. World War I came on and I found a Civil Service job with the Alien Property Custodian, followed by valuation work for the Air Force and the Income Tax Unit. In 1924 another M.I.T. man and myself opened an office in New York to handle the technical phases of income tax cases. We were quite successful for a few years; but the competition of the large accounting firms was hard to combat, and panic of 1929 put us out of business.

"One of the drums I had been listening to in Washington and New York urged me to look into the history of different kinds of machines, and especially machine tools. At this time I wrote an article for the *Journal of Accountancy* on obsolescence, a series of illustrated articles on the trees of Prospect Park for the *Brooklyn Sunday Eagle*, and some stuff for the *New York Sun* on building radios at home. Also a few articles in the *American Machinist* on old machine tools.

"After our business folded, I was taken on by a new museum, the New York Museum of Science and Industry. I then thought I was all set for life in a position I liked and one I was fitted for. But we little know. Unfortunately most of the museum's endowment was in the form of railroad stocks and bonds, which were the lowest of all the lows and paid no interest. While I was with the museum, I wrote an article on the history of the turning lathe for the *Technology Review* — James Kilian, editor — and have since written three more on machine tools.

"After the museum job folded, I came back to Boston. Here I met a lady who had seen the exhibit of old lighting devices I had assembled for the museum; and I was invited to join the Rushlight Club, a group of old lamp collectors. They

published a thin quarterly bulletin, of which I was the editor. Writing and research kept up my spirits during the hard times in the Thirties, but they did little for my pocketbook. But after all the young and middle-aged men had been hired to help win World War II, I was taken on as an inspector by the Air Force. This inspection was on small parts. I did very well at this because I knew how to get along with machinists as well as machines. I even got to be a sort of instructor, but at the end of the war I was really retired and had to accept the fact. So we settled down on my retirement and very little interest money but a number of interests. These have kept me going ever since. We are both going strong if not very wide or high.

"About the book I mentioned a while back. After 25 years the Rushlight Club thought it should publish a book on the history of lighting devices, and I was given the job. I received my author's copy a few days ago. The title is: *Flickering Flames, A History of Domestic Lighting*. (Charles E. Tuttle and Co., Rutland, Vt., if the editor will permit this plug.) This will never make me rich nor cause my name to go ringing and dinging down the corridors of time, but possibly there will be written on the wall in small print: Thwing was here.

"I have doubted it in the past but now, when I have collected more data and acquired a better perspective on it, I realize and know that I have been greatly blessed." (Apartment 73, 17 Newtowne Court, Cambridge, Mass., March 1, 1958.) Congratulations to our new author. More of our classmates should now find writing a most worth-while activity. — LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass. FRED A. EUSTIS, *Treasurer*, 131 State Street, Boston 9, Mass.

1904

Guy Palmer gets a prize this month for a note announcing an impending trip to Florida, from which note the following is quoted: "As we leave for Florida (February 25) I am reminded of the '04 reunion, which is to be held during the first three weeks of March at the Haven Hotel, Winter Haven. Holcombe assures me the weather will be right. Maybe you know of someone who will be in Florida at that time. We expect the Newells, Coupes, Holcombes, Sheafes, and Palmers." At last accounts the Langs were enjoying Jamaica sunshine after a stormy leave-taking of the U.S.A. Your volunteer class notes secretaries are in circulation again after bouts with physical disabilities. Gene was in the hospital to allow a surgeon to remove a kidney stone, and Carle was in bed for a week fighting a flu bug.

It was a pleasure to have a chat with Bill Boggs at the annual Mining and Metallurgical Engineers meeting in New York in February. Bill reports that the copper smelting furnace he recently designed in Arizona is working fine, and it was evident he felt proud of his job. He is now back at his home in Garden City, N. Y. Bill has made an enviable record for himself as a copper furnace designer and operator.

When you read these notes the annual Alumni Day will be close at hand. All activities will be on campus again this year and, following last year's precedent, will be climaxed by a Boston Symphony Pops concert in Kresge Auditorium. We suggest that you give serious attention to attending all or part of the Alumni Day festivities.

Finally, we have three deaths to report. First Miss Lillian M. Towne, who studied at M.I.T., Columbia, and Radcliffe and was associated with the Boston school system for 50 years. At the time of her retirement she had served as principal of the Bowdoin and Thomas Gardner Schools. Second, Cutler D. Knowlton of Rockport, Mass., who for 35 years had been a designer and inventor for the United Shoe Machinery Company. Third, Commander William B. Fogarty of Cincinnati, Ohio. Unfortunately we have no details about him. — EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston, Mass. CARLE R. HAYWARD, *President and Acting Secretary*, Room 35-304, M.I.T., Cambridge 39, Mass.

1905

My last effort in trying to get news for this column—a mimeographed letter on February 6 to 50 members whom we had not heard from for several years, resulted in three answers. One consisted of a signature on a check for class dues of 1957; another, as reported last month; and the third, from Edward Church Smith, V, of Lakewood, Ohio. It is so interesting, I am quoting herewith:

"The few men I was acquainted with were students in Course V, Mechanical Option (1). But those whom I knew best — E. W. Wiggins, A. L. Smith, and A. C. Long — have all died, while I am spared to reach the age of 80. The reason I went to M.I.T. was at the advice of Frank P. Harris, Amherst 1900, M.I.T. 1902, who said: 'You should go to M.I.T., complete their chemical course; then you are sure of a job, for the industrialists are going there to get technical men for their factories and laboratories.' I told Professor Walker to let me interview some such seekers, and before graduation in 1905 I had met Mr. Amos N. Barron of the National Carbon Company of Cleveland, Ohio. So I obtained a job with this concern and was in their employ for 40 years, serving in various capacities at their plants in Cleveland and Fremont, Ohio; Toronto, Canada; then back to Fremont; and finally, a final 20 years in Cleveland. It was most interesting work — manufacture and development of Eveready dry cells and batteries. I retired in July, 1945. I found my wife, Edna Grace Fowler, in Fremont. Her father had been an employee of the Carbon Works there. Our son, Edward Fowler Smith, born in Toronto, graduated from Oberlin, 1936; studied library science at Western Reserve University, Cleveland; and got a job in the library of the Missouri School of Mines and Metallurgy at Rolla, Mo., a branch of the state university. After two years he was acting librarian there. Then for three years he was librarian at Lewis Institute in Chicago. After serving Uncle Sam in World War II, he obtained a position as

librarian for the Argonne National Laboratory, operated for the Atomic Energy Commission by Chicago University. His work is at the new laboratory at Lemont, Ill. He lives in Naperville, Ill. Two children have been born to them. One is Alan Craig Smith, born February 21, 1955. Today we have news of number two, Diana Carolyn Smith, born February 13, 1958. This is of interest to us. Alan is the only boy by the name of Smith among the 37 living descendants of my Grandfather Samuel Smith, Sr., of Middlefield, Mass., to carry on the family name. Since my retirement I have given up chemistry and have devoted considerable time and earned some money working at historical and genealogical research.

"With my brother, the late Philip Mack Smith of Washington, D. C., I was co-author of *The History of Middlefield, Mass.* in 1924. I am issuing in typescript two works tracing our Smith and Church family ancestries back to emigrant ancestors. Why, we Smiths can rightfully claim that *the Battle of Bunker Hill was fought in our backyard*. You see, our emigrant ancestor, Matthew Smith, settled on a farm he bought on Mill Hill in Charlestown, Mass. That hill was Breed's Hill where the monument now stands. Not only this, but when Matthew died his farm was sold to one John Melvin, who lived on this same farm and whose son David Melvin was born there. These folks were among my mother's ancestors, so we have a double claim on the battle. To be sure, our Smiths had moved to Connecticut before the battle was fought; but my ancestor Matthew Smith of East Haddam, Conn., responded to the Lexington alarm. Though he did not get into either battle, he was guarding the lines in Roxbury when the contest was fought on the Hill. Well, I fear this does not come up to the things which might interest the men in M.I.T. 1905, but it is the best I have to offer."

Dick Senger is still the Number 1 optimist as he reports progress on that badly smashed leg, for he states that at the end of the 13th month in his hospital bed: "Everything is at last shaping up. The leg is well knit, the remnant of the original one has been joined on to one from one deceased. Now after a long and boring physical therapy treatment, I will be released in crutches, maybe in late April." His address is R. W. Senger, Latter Day Saints Hospital, Salt Lake City, Utah. Why not drop him a line for old times' sake?

The Goldthwaits are rather belatedly catching up with most of the old-timers on grandchildren. The latest, our ninth (and our fourth granddaughter), was born to our daughter Carol Bickford on March 15. Through Andy Fisher we learn that Prince and Ethel Crowell are at this writing cruising in the Caribbean and Panama Canal vicinity. Must be funny for Prince to be traveling in a boat in which he is not doing the steering. We learn through a clipping from a Phi Gamma Delta bulletin that Ben and Leslie Lindsly celebrated their golden wedding anniversary on October 28, 1957. Son Robert and family were present; but another son, Lieutenant Richard, was in Honolulu.

You have had notice that Alumni Day will be celebrated this year on Monday, June 16. We had a grand turnout and a special reserved table on Alumni Day last year. Let's make it even bigger and better this year. I haven't heard a word from anyone in regard to celebrating our 53d on Cape Cod this year. My attempts at interpreting your desires in this direction the last two years have so backfired that I shall do no promotion of this idea this year unless a reasonable number evidence a demand. Nevertheless, accommodations could undoubtedly be had at the Wianno Club on either of the last two week ends in June. In spite of so-called reservations, Ralph Hadley was the only one who showed up last year — no one to play tennis with.

Here is the letter from Willard E. Simpson, I, which was mentioned in the April notes:

"Although, generally, construction work is diminishing in this territory, we in this office are keeping busy; and I consider ourselves very lucky. Of course, however, when you have established yourself favorably in a community, it is the best asset to have. Our work comes to us almost 100 per cent unsolicited, probably because we have always given thorough, complete service. We are in the midst of receiving quite a lot of favorable attention now because they are dedicating a new 20-story building on which we were the engineers for the structural frame and foundation, namely the National Bank of Commerce. The significance of it is that it is the first skyscraper to be built in this city in 26 years and represents a very progressive step on the part of the National Bank of Commerce. It so happens that the last building like it was built in this city 26 years ago, and they employed us as the structural engineers; so we have finally spanned the gap. In the last depression of the Thirties, and just before it, there were quite a number of large structures built here, most of which were improperly financed; and almost every one was lost to the original builders or original owners. You know that that casts quite a blanket of pessimism over anyone else attempting skyscrapers in the future. This is a very conservative town. While we have lots of wealthy ranchmen here who are close and many wealthy oil men who are still closer with their money, they are very careful how they invest it in building construction.

"We are surrounded by many large government posts, both in the Army and the Air Corps. Sometimes I think they employ one-third of the population of San Antonio. I wonder many times, when I am traveling around the outer limits of the city, where all the people come from; this city is growing very rapidly, like all other Texas cities are. Houston is the largest, probably growing as rapidly as any; Dallas next; then San Antonio, which is really growing more rapidly than the other two cities — not commercially, but people just seem to like to live here.

"Way back in November we had a snowstorm that deposited about two inches of very wet snow that was gone in 12 hours. Still, we had a snowstorm, and the wind scramble that went with it, at-

tempting to make snowballs, and that kind of fun. The best thing that has happened to us is the very wet 1957, still continuing wet. We surely needed the rains. It had been seven years since we had had any rain of any kind. In 1956 our rainfall was only 14 inches. In 1957 it was 54 inches. The static level of our artesian supply dropped to a point 46' below what it is now, and our water supply was getting very scarce; however, since it has risen that 46' now, everybody is tickled, although there are a lot of other troubles. I have been sent on innumerable occasions to try to tell owners where all the water was coming from under their buildings or under their property; and upon inquiring if there were any old artesian wells under their property, found them uncapped and flowing. Old wells that were abandoned, because they thought they were dry, have suddenly started flowing again, which requires the proper amount of sealing off way down at the lower level. It is good to have the water, though.

"I wish I could drop into Boston and have lunch with you at the Thompson Spa. That used to be my favorite place while I was at the Institute, and I imagine it is just about the same as it was when we were at school. I don't know whether I ever told you when I was at our 50th reunion I just had to go by S. S. Pierce and Company, an old favorite stamping ground of mine, and I found it almost the same. Even I think the same old counter that they used to have a big coffee grinder on where my brother Guy and I went one day and asked for Gebhardt's Chili Powder, thinking we would stump them, and the clerk didn't bat an eye but just walked to a shelf and handed it to us. I asked an older clerk when I was there and told him about the instance, and his remark was, 'Will you have another bottle now?' So they must be maintaining their old slogan, 'Ask for it and we have it.' You know Gebhardt Chili Powder is made here in San Antonio and is very extensively used in this state and in other places as well."

Because I had not heard of his ill health, it was a shock to me to learn of the death of Harold C. Mitchell, I, at Erie, Pa., on March 6, 1958. Mitch attended the 50th reunion, but we had not heard from him since. He retired in 1947 after spending 37 years with the Erie Works of the General Electric Co. At retirement he was superintendent of building, grounds, and power at the big Erie plant. His own story in our 30th reunion booklet said: "It has been a pleasure to help transform farm land into an industrial plant having two and one-half million square feet of floor space." Francis M. Hill, who was with us only a short time (Course IX), died at his home in Saugus on January 31, 1958. After leaving M.I.T. he graduated from Boston University, was director of the Division of Corporations for the Massachusetts Tax Department for 37 years, retiring in 1952.

Remember that Alumni Day is Monday, June 16, this year. — FRED W. GOLDTHWAIT, *Secretary*, 57 Nowell Road, Melrose Highlands 77, Mass. GILBERT S. TOWER, *Assistant Secretary*, 36 North Main Street, Cohasset, Mass.

Today has been the kind when I yearn to bask on the sunny side of a hillside stonewall and just ruminate — a state of mind induced perhaps by our recent visit to the Boston Flower Show with its taste of May.

In the April notes you read some details of the traveling Hoefers' round the world trip, but they haven't spent ALL their time going places. Chester was born and raised in Freeport, Ill.; attended the public schools, with special training from experts connected with the family-owned Hoefer Manufacturing Co.; and after getting his B.S. at the University of Wisconsin in 1905, joined our Class in senior year, being a member of the Electrical Engineering Society. Returning to Freeport, he soon became secretary of that company (manufacturers of machine tools), then general manager and treasurer. When the company was sold to the Oliver Corp. in 1945, Chester and Ruth came to Boston; and with the exception of a year with Barkley and Dexter on a special assignment, he has spent the intervening years in local activities and foreign travel — 10 different trips, he says. Before they left Freeport Chester had run up a commendable roster of civic, church, and social activities: on the board of directors of the Y.M.C.A.; Chamber of Commerce; Embury Church; Boy Scouts; Housing Commission; Hospital; and on committees of the country club, Rotary, Masonic, and so forth.

In 1912 he married Ruth Burlingame of Rockford, Ill., and they have two daughters. Priscilla graduated from Stephens Junior College and then Boston University; has traveled extensively in Mexico, Guatemala, South America, and Europe in pursuit of her hobby, archaeology; and is now living in New York working as associate editor of *Radio News and Television* with Zipp Davis Publishing Co., and is also a free lance writer. Pauline graduated from Smith with her junior year at the Sorbonne; married F. J. Swayze, a Pan-American executive; and has a four-year-old daughter, Carolyn. Being the wife of an airways official, Pauline has been around, too. She has lived, among other places, in Prague, Lisbon, Karachi, and Beirut. The Swayzes are now located in New York.

Fires often result in the loss of items which perhaps have little intrinsic value but are cherished for historical or sentimental reasons. Frederic E. Earle, II, had such an unfortunate experience in 1946, when his factory in Bridgeport, Conn., burned and Fred lost his diploma. He wrote me to see if it could be replaced, but by checking with Don Severance I found that the Registrar's Office ruled some years ago that a duplication would be a forgery, and in lieu thereof they furnish a "certificate." Fred was born October 2, 1883, in Boston; prepared at English High; and was a member of the Mechanical Engineering Society, his thesis being a "Duty Test on Taunton Pumping Station." His entire business career has been in heavy duty industrial and factory piping, heating, ventilating, air conditioning, and materials therefor. After four years with an excellent Boston

concern in that line, Lumsden and Van Stone, Fred set up shop in New Bedford; formed Earle, Griffin, and Co. steam fitters and rigging contractors (later F. E. Earle Co.); moved over to Bridgeport around 1935; and acquired the factory in 1940.

In 1910 Fred married Lavinia M. McLean of Boston, and they have two sons. George married in 1940; and after his wife's death in 1950, he married Patricia Day. The younger son, David, married Lois Elaine Mears in 1940; and they have four children, living now in Miami, where he is a lawyer. George is a professor at the New York State College of Forestry in Syracuse; and it was to take over the care of his two small children that Fred and his wife moved from Boston out there, where he had become a Christian Science Practitioner. George now has three more children, so as Fred says: "There is never a dull moment in George's home. Visiting either family, as grandparents know, is quite a project, not to be considered lightly — yes, you are right, I have no gripes (almost none) and my wife and I are very happily working and living."

Back in February the M.I.T. Student Committee on Educational Policy sponsored a panel discussion in Kresge Auditorium entitled "M.I.T. — a Professional School?" It was open to the general public, and some of the matters discussed included: (a) what are the natures of science and engineering as professions? (b) what special responsibilities, if any, do the scientist and the engineer hold to society? and (c) how does M.I.T. attempt to convey these responsibilities to its undergraduates? Except for the moderator, Edwin D. Canham, and Dr. Wiener, the panelists were all distinguished M.I.T. Alumni, including Dr. J. Howard Means '06. In the notes a few months back some details of his outstanding work in medicine and research were included, but no mention was made of his service in World War I. Dr. Means entered the service as a first lieutenant on June 7, 1917. He became a captain on November 2 and major on November 14, 1918. He had the following duties: with American Expeditionary Force, July 11, 1917, to March 2, 1919; Base Hospital 6, August 30, 1917, to May 14, 1918; temporary duty in the office of the chief surgeon, American headquarters, London, until September, 1918; engaged in work on the influenza epidemic, September to October, 1918; engaged in debarkation of the American forces, November 11, 1918, to January 8, 1919; Base Hospital 6, January 8 to February 14, 1919.

In the December number of *Iota Muse*, Phi Gamma Delta alumni periodical, another classmate had a contribution. Herbert J. Mann, II, whose career was given in some detail in the July 1956 notes, concluded with this bit of nostalgia: "Back at 74 Marlborough remembering the etiquette of the afternoon call (by a Proper Bostonian?) on a cold winter's day, a carriage would drive up to one of our neighbors' houses where the footman would open the door and help his mistress out. Then he would stand at attention at the curb with the lap robe correctly folded over his arm, while the coachman would drive the horses slowly up and down the

street so that they wouldn't cool off. Quite a sight! Nowadays the chauffeur would drive the Cadillac round and round the block hunting hopefully for a spot in which to park!

A belated report of the death last October 23 of Edward Leodore Mayberry has come through the Alumni Office. He was perhaps the oldest fellow in the Class, having been born September 18, 1871, at Sacramento, Calif. His home address was Long Beach, where he always maintained his home, I believe, except for his stay in Boston and during his service in World War I beginning in November, 1917, as captain of engineers. He had prepared at Los Angeles High and received his bachelor of letters degree at University of California before entering Tech our sophomore year. He was a member of the California Club and the Architectural Society — treasurer senior year — and graduated with us in Course IV. His thesis was "Investigation of Reinforced Concrete Girders." Returning to Los Angeles, he formed a partnership with L. A. Parker, also '06 IV; and as architects and engineers they together took an active part in the phenomenal growth of that area until he left for war service. After severance he opened his own office in Los Angeles and in the early Thirties moved his headquarters to Long Beach, evidently retiring a few years ago. Like many other classmates who came to Tech with a degree from another institution, his primary interest may have been with University of California, but for some reason his interest in M.I.T. and '06 was revived during a 10-year period prior to our 20 year reunion, as evidenced by his regular contributions to the class treasury during that time. Our records contain no information about his family or his memberships in professional societies.

Even more belated is the report through the Alumni Office of the death last August 28 in Boothbay, Me., of Harold Kay Merrow, X, Theta Xi. His home address was Hyde Park, Mass. He entered with '05 in Course V, changing to X his second year, and graduated with our Class. Except for a few years around 1915 with the National Equipment Co. in Springfield, Mass., he was with the firm of Merrow Bros., Inc. (machinery), which for many years was located in Boston. Later and until he retired around 1954 as treasurer, Merrow was in Hyde Park. Harold evidently, as far as we know, had no interest in, or contacts with, our Class; and we have no information whatsoever about his family or any of his other activities.

Last month we reported the death of Ralph Temple Cushman Jackson, IV, S.B. and S.M., in Phoenix; but we do not yet know the date, probably late January or early February. Ralph was born August 18, 1879, in Great Pond, Maine, and his home address was Brighton, Mass. He prepared at Mt. Hermon School and was a versatile musician during our undergraduate days: a tenor on the Glee Club; played the cello, mandola, guitar, and mandolin in the Musical Clubs, of which he was president junior year; in the 1904 Tech Show; assistant art editor of '06 *Technique*; member of the Architectural Society, and on the executive committee.

He has been a practicing architect all his life; first in Fall River, then in New York City. He formed Jackson and Salomonson in Boston by or before 1916. During World War I, he was an assistant engineer with Fay, Spofford and Thorndike, "designing and supervising engineers at Boston Army Supply Base; designed a 2,500 ton concrete coal barge and a 7,500 ton concrete cargo ship for New England Transportation Co." Since then his office has been in Boston. For a number of years after his son, Foster R., received his bachelor of architecture degree in '34, they worked together. The son moved to California about 10 years ago. Ralph evidently retired by or before 1955, as his address then was Ellsworth, Maine and by '57 was Phoenix, Ariz. He married Elizabeth Meserole Rhodes in 1907 and they had three children, according to the 1916 class history. The above information about one son was obtained from the Alumni Registers.

There are three address changes for your class directory. Charles Kasson, VI, is now in Plaistow, N. H., Box 326A, Route I; Mrs. Rudolph J. Thanisch (Marion Hibbard) is in Lakeport, N. H., at 43 Clark Avenue; James Garfield Riley, V, is still in Washington, D. C., but has moved to 1734 P Street, Northwest. Jim has had a long career in federal service, both as a civilian and in World War I. He was born October 16, 1881, in Waltham, Mass.; prepared at Waltham High School; and started Tech with '05 as a special, graduating with '06. Except for his war service he has been a research chemist, first with the Department of Agriculture and later with the Treasury Department; then he studied law, and in 1940 was an associate attorney in the Department of Justice, later in the Assistant Solicitor's office. I believe Jim retired before our 50th and has been a V.P. of the National Mortgage and Investment Corp. in Washington. His professional activities during World War I must have been interesting. To quote from the *War Record*: "Captain, Food Division, Surgeon General's Office, Washington, D. C., January, 1918; with Hospital Unit 40, Liverpool, England, engaged in provisioning British ships used to bring back the returning Army, March, 1919." Jim retired as a major.

Have you put a red circle around Monday, June 16, on your calendar and the vest pocket memo? That's Alumni Day, all on campus, interesting morning program, luncheon, guided tours, social hour with what it takes, the banquet, and again Boston Pope Orchestra in Kresge. SEE YOU THEN? — EDWARD B. ROWE, *Secretary*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

Anthony Arnold of 538 Lawrence Avenue, Westfield, N. J., mailed to me on February 24 a welcome little note in which he said that he and his wife had just returned home from a month in "chilly Florida," and that they were planning to spend April in Spain and May in England. Carl Bragdon thoughtfully wrote to me on March 1 stating that for about two years he has been technical

editor of a book, recently published by Interscience Publishers of New York and London, entitled, *Film Formation, Film Properties, and Film Deterioration*. Carl, you will recall, is a consultant in surface coatings and their materials, with his office at his home at 4 Rock Ridge Road, Larchmont, N. Y. He is planning on starting another book on "Metal Decorating," which will be more his personal product than this one was; but he says before he begins he "must first find a venturesome publisher."

In the *Boston Herald* of March 7 appeared a notice which surprised and saddened me because it told of the death of George Crane of our Class on the morning of the preceding day. I immediately wrote a note of sympathy in behalf of the Class to Mrs. Crane, and under date of March 19 I received a gracious reply in which she said that for several years George had been troubled with high blood pressure. For some time he had not been feeling quite himself. As he was planning on retiring soon, Mrs. Crane thought that a good rest and relaxation would help him so that he would be better. In fact, complete retirement was only a few days away. On Thursday morning, March 6, he left his home as usual to go to his office. Mrs. Crane cited that as she did not hear his car start nor see him, she became anxious and went out to the garage. She found him on the floor beside the door of the car. He was buried in Mayflower Hill Cemetery in Taunton, Mass., on March 8. George was a graduate in the Course in Civil Engineering and followed the engineering profession all of his life. For 22 years he was successively computer, material clerk, chief estimator, and manager with six different firms, until in 1929 he and Ed Temple of our Class got together; and since then, under the name of Temple and Crane, Inc., they have operated as general contractors, with offices at 80 Federal Street, Boston, George being the treasurer of the corporation. George has always been a most interested and loyal Tech Alumnus and member of '07. Seldom was he absent from a class dinner or reunion. In June of 1944, after the death of Lawrie Allen, I nominated him to be our class representative on the Alumni Council, and he faithfully served in that capacity until the time of his death. We shall surely miss him at future class gatherings. He is survived by his wife, who lives at 1 Brae Burn Road, Milton, Mass.; and by two sons, H. Irving Crane of Waltham, Mass., Ph.D. at M.I.T. in 1937, and Russell A. Crane of Bronxville, N. Y., who received his S.B. degree at M.I.T. in 1942.

Two reminders: (1) Although we are not raising money this year for a 50 Year Class Gift, let us be generous in our giving to the M.I.T. Alumni Fund; (2) Tech Alumni Day will be on June 16, 1958, all on the campus at Cambridge, with concert in the evening in Kresge Auditorium by the internationally known Boston Pops Orchestra. Plan to be at Cambridge on that day and to take your wife with you. — BRYANT NICHOLS, *President* and *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary* and *Treasurer*, 18 Summit Street, Whitinsville, Mass.

Our third dinner meeting of the 1957-58 season was held at the M.I.T. Faculty Club, Cambridge, Mass., on Wednesday, March 5, at 6:00 P.M. Bunny Ames, Bill Booth, Nick Carter, Fred Cole, Les Ellis, Ted Joy, Bill Medicott, and Joe Wattles answered the roll call. We were favored with two guests, Helen Ellis and Eudora Wattles. We were pleased to have Ted Joy and Bill Medicott with us, as we don't see them often. Hope they will come again soon.

Our party gathered in the Cocktail Lounge, where Bill Booth, who had arrived early, had captured a window table. There is always a crowd at the Club on Wednesdays, and tables and chairs are at a premium. We finally found enough chairs so we could all sit down while enjoying our favorite tonics and the delicious crackers and cheese, potato chips, and so forth. About 6:30 P.M. we adjourned to Private Dining Room Number 1, overlooking the Charles River and the Boston skyline. This view is well worth seeing as the lights come on. The food, as usual, was excellent, with various choices to suit everyone. Just as we were about ready to order dessert, the lights were dimmed and a birthday cake with burning candles was placed before Eudora, in honor of her birthday. Am afraid the singing of "Happy Birthday" was not too hot, but guess what we need is more practice. This solved our choices for dessert, as we all had bountiful helpings of birthday cake, ice cream, and coffee.

We discussed how our 50 Year Gift to the Institute was coming along, and we were glad to report good progress. We were glad to report a contribution from Dorathea Mayo in memory of Linc. How Linc would have reveled in our 50th! Les Ellis outlined some of his plans for our 50th reunion and invited suggestions. We adjourned about 8:30 P.M. so Les and Helen could catch a train for Melrose.

The February issue of *Journal of Engineering Education* has an interesting article by Gregory Dexter. He says, in part: "The present approved list of about 150 schools includes both Grade A and B. . . . Grade B should be eliminated as deceiving our future engineers. They do not realize that a Grade B engineering education handicaps them about a year if they go on to a Grade A school for a master's or doctor's degree."

Am very sorry to report death of Abbot Thompson on February 26, 1958, at his home in West Franklin, N. H. Also have only just learned of the death of William A. Stocking at his home in Clearwater, Fla., on May 9, 1957. The sympathy of the Class has been extended to Karl Kenison on the sudden death of his wife on February 14 at their home in Rowayton, Conn.

1908's BIG TIME comes next month with our 50 year reunion at Snow Inn, Harwichport, Mass., on the Cape, June 13 to 15. Les Ellis, Reunion Chairman, tells me early replies indicate a good turnout, but please hurry your reservations along to Les. REMEMBER, LADIES ARE INVITED.

On June 16 Alumni Day will be held at Cambridge. During the banquet, we present our '08 50 Year Gift to M.I.T. Have

you subscribed to this year's Alumni Fund? Your gift helps to build up our Class 50 Year Gift to M.I.T. So please be generous. Your 50 Year Gift Committee has been busy and reports some substantial gifts from classmates; but it's up to everyone to help. Even though you may have made a token subscription to the Alumni Fund last fall, see if you can't make a second gift in 1958. Remember that M.I.T. did a good job in preparing you for your life work; so show your appreciation by subscribing to the Alumni Fund, your way of saying "Thank you."

Alumni Day will conclude with a concert in Kresge by Arthur Fiedler's famous Boston Pops Orchestra. Plan to be with us at Harwichport and on the campus at M.I.T. Remember, you will never have another 50th—so why not really enjoy it? H. A. S. N.?—H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer and Reunion Chairman*, 230 Melrose Street, Melrose 76, Mass.

1909

In the April Review we reported that Molly, XI, as acting president of the Class, had appointed a nominating committee consisting of Brad Dewey, X; John Willard, II; and Bob Keeney, III. The committee has reported to the president and recommends the nomination of Molly as president; Tom Desmond, I, as vice-president; and Chet Dawes, VI, as secretary. Class members will receive, or may already have received, the letter ballots.

In the last number of The Review Mrs. Critchett stated that in the book *Successful Leadership in Business* by Charles Cerami, "there was a chapter about Jim which is the most perfect picture of him you can imagine. You'd enjoy it." We have obtained a copy of the book and sure enough, Jim is cited as an outstanding example of "Confidence in Your Manner." One day early in the Korean War when the government was frenziedly organizing temporary agencies to control materials, prices, etc., the author of the book walked into a building that housed a newly formed temporary federal agency. It was a tremendous building; and one-half an entire floor was jammed with workers, with two and three officials sharing one secretarial desk. All was pandemonium and the place really a madhouse. The author saw several persons about a particular problem, and it looked as if he would not get an answer for several weeks to come. Somehow he was directed to the desk of a man who had been called out of retirement the day before to organize a division of the agency. James H. Critchett had been one of the leading executives of the vast Union Carbide and Carbon Corporation, had retired to a peaceful Cape Cod home for a well deserved rest, and now had answered a call to duty that could not be ignored. To make a longer story short, Jim sat calmly in the maelstrom; and under pressure to organize the agency, "discussed the problem that my company faced with an absorption that astonished me. He was through with me in perhaps four or five minutes, although his easy manner made it seem a real chat; and in that time he learned all

he needed to know about our plans and told me more about what we could expect than I had heard all day." The author then cited Jim as an example of the qualities that a successful executive should have: courtesy, concentration, confidence. In reading the excerpt we, who knew Jim, could visualize him sitting there with his pipe, calmly deciding on what was necessary to bring order out of the prevailing chaos.

We all know of the arboretum which Tom and Alice Desmond maintain at their home at Newburgh, N. Y., and to which they have repeatedly stated that any members of '09 would be welcome at any time. We have just received the following notice from Tom's secretary, advising that he has now extended the invitation to the public: "New York State Senator Thomas C. Desmond, M.I.T. 1909 and a life member of the M.I.T. Corporation, has announced that the arboretum at his home about two miles north of Newburgh, although privately owned and maintained, will be open to the public without charge from now on during the hours from 10:00 A.M. to 4:00 P.M. on all weekdays. No advance notice of visits is necessary. The arboretum now includes about 5,000 trees, shrubs and woody vines of nearly 900 different species. Senator Desmond emphasized that it is interesting to visit during the winter as well as the summer months."

Steve, X, (J. N. Stephenson) noted that there was no '09 news in at least one number of The Review, so took pity on us and sent the following item: "The Pulp and Paper School at the University of Maine were stuck for someone to start the new semester, so they sent an S.O.S. to me. With the help of friends, I was able to collect enough material for the two-hour lecture on 'Trends in the Pulp and Paper Industry.' It was a very enjoyable visit to the campus where I went in 1913 to help in inaugurating America's first course in pulp and paper technology. Great improvements have taken place since the students and I set up the first papermaking equipment in a basement corner. The new Chemical Engineering building—Aubert Hall—is the largest on the campus and is exceedingly well equipped with pulp digester, stock preparation units, and a complete and versatile paper machine. I spent a couple of hours looking around the Institute on my way to Orono; but it was Sunday, so I followed Dr. Killian's advice given me in Montreal at the Quebec M.I.T. Club meeting. That was to inspect the Kresge Auditorium. I butted in on a Tech Show rehearsal, and what do you know? There are real girls in it! Some change from 'The Freshman' in which I was a chorus girl. (Bless Macomber and Coach Francis for the chance!) We are planning to be in Boston in June, 1959." You will all remember we have already reported that Steve was awarded the honorary degree of doctor of science last June by the University of Maine.

We have just received a letter from Grace B. Reilly (Mrs. William R.), widow of the late Bill Reilly of Barre, Vt., which states in part: "Have recently returned from Noranda, Quebec, where I went to attend the funeral of my brother-in-law.

My sister, who is not planning to stay in that part of Canada, has asked me to send the enclosed to you for The Review. Mr. Loring, (III), was also a member of the A T Ω fraternity and a golden circle member." The enclosure is as follows: "Ernest Moore Loring died February 18, 1958, at his home in Noranda, Quebec, after a short illness. He was born November 14, 1884, in Rico, Colo., son of Frank Curtis Loring and Charlotte Moore Loring, both of whom predeceased him. His father was a noted consulting mining engineer in western Canada and in the cobalt district during the days of its early development. Ernest Loring had a liberal and extensive education, having attended the University of Geneva, Switzerland; the Technische Hochschule in Bavaria, Germany; the Armour Institute in Chicago; and was graduated as a mining engineer from the Massachusetts Institute of Technology. During this period he became proficient in the art of fencing and received many medals in competitions in Europe and America. He married Eva Bacheller of Medford, Mass., a graduate of Wellesley College, whom he brought with him to share his life in the then developing mining country of northern Ontario and Quebec. In the discharge of his professional duties, which included operation, exploration, and development, Ernest and his family resided in various northern Ontario communities and finally in Noranda, Quebec. He is survived by his wife; his three sons, William B., a geologist in Utah, Frank C., an engineer in Ontario, and Thomas J., a forestry engineer for the state of New Mexico; one daughter, Mrs. Henry (Margaret) Zapor, who resides at Tucson, Ariz.; another daughter, Sister M. John Francis (Alice) of the Congregation of St. Joseph, who is teaching high school at Colgan, Ontario." We have written to Mrs. Loring expressing the sympathy of the Class as well as our own. Mrs. Reilly also sent a check for the renewal of Bill's subscription to The Review, stating: "I have missed it, as when younger I knew most of the boys in his Class as well as in the Classes before and after his." Incidentally, Ernest performed his thesis, "Concentration and Cyaniding of Ore from Cobalt," with Bill Reilly.

We have received notice from the Alumni Office of the death, on February 17, of William F. Gilman, VI, at Provincetown, Mass. He was born January 19, 1883, his home address at the time being Cristobal, Canal Zone. He prepared for the Institute at East Maine Conference Seminary, Bucksport, Maine. Our records show that he attended the Institute the first term only of his freshman year; that at different times he was connected with the Central Illinois Public Service Company and the Kwang Tung Electric Supply Company, Canton, China; that his address was Belgrade Lakes, Maine, from 1931-1935, and since 1935 was Provincetown, Mass. In September, 1929, he married Mae L. Dickson of Los Angeles, Calif. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 250 East 43d Street, New York 17, N. Y., GEORGE E. WALLIS, Wenham, Mass.

1910

Class news has been practically zero for the past two months. The only news I had last month was the attendance at the Midwinter Alumni Meeting. There were four of us present: Jack Babcock, Sam Cohen, George Lunt, and myself. We had a very pleasant evening together and enjoyed the program at the Kresge Auditorium.

Carroll Benton sent me a schedule of class luncheons to be held in New York City at the Biltmore Hotel every month. Our Class meets on Wednesday of the third full week at 12:30 P.M. I am hoping I may be present at the April or May meeting.

The Lynn, Mass., *Item* had a news item about John Gray last month. John has been appointed architect for a large junior high school in Swampscott, Mass. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston 8, Mass.

1911

We were saddened the latter part of February to learn from his wife, Geneva, of the death of our popular classmate, Ed Stimpson, X, at his home in Newburgh, N. Y. He had retired five years ago as supervisor of the cost estimate group of E. I. du Pont de Nemours and Company, Inc., after 41 years of service.

Born in Providence, R. I., he attended public schools there, graduating from Hope High School. After graduation in 1911, he entered the employ of Du Pont at once at the experimental station in Wilmington, Del. Two years later he was transferred to the Newburgh plant in charge of the laboratory. Then in 1915 he once again returned to the main plant in Wilmington, returning permanently to Newburgh in 1922.

Ed is survived by his wife, the former Geneva Alexander; a brother, Henry P. Stimpson; a nephew, Henry P., Jr.; and a cousin, Raymond Henthorne, all of Hoxsie, R. I. His father was a graduate of M.I.T. in the Class of 1877. Ed was a member of Grace Methodist Church in Newburgh and had served on its official board. He was a member of Newburgh Lodge of Masons and the Quarter Century Club of Newburgh.

Geneva wrote that both she and Ed had so enjoyed previous 1911 reunions (they had an enviable record of attendance) and were looking forward with great anticipation and joy to our Golden Anniversary in 1961. Our deep sympathy has, of course, been expressed to Geneva. We have lost a loyal active member of our Class.

This year's winner of the Isaiah Thomas Award of the Advertising Club of Worcester is our loyal classmate, Fred Harold Daniels, VI, of whom we may once again be justly proud. The award is a replica of the famed Isaiah Thomas printing press and gives tangible recognition to "citizens whose personal efforts and accomplishments have made Worcester a better community in which to live, to do business, and to enjoy living."

In an advance story announcing the award, which takes place April 29 in Hotel Bancroft, Worcester, the *Worcester*

Telegram said: "This year, the award will honor a Worcester native who has distinguished himself both in his chosen field of business and engineering and in the wider field of community service.

"In his boyhood, Daniels has confessed, his ambition was to be a tow-boy — the man whose job it was to help pull the horse-drawn cars up the steep grade of Lincoln hill." Despite this, Fred followed in the footsteps of his father, Fred Harris Daniels, a great business executive, who served the American Steel and Wire Co. as chief engineer and U. S. Steel Corporation as consulting engineer for many years. After Worcester public schools, Fred graduated from Worcester Academy and then spent a couple of years at Bryant and Stratton Business School in Boston before entering Yale, where he received a bachelor of philosophy degree in mechanical engineering at Sheffield. He then joined us and received his bachelor of science with us in electrical engineering.

Upon graduation, he joined the B. F. Sturtevant Company in Hyde Park (Boston); but in 1913, when R. Sanford Riley organized his Riley Stoker Corporation in Worcester, Fred left Sturtevant to become secretary of this firm, of which he is now the still active chairman of the directors and vice-president. He has also been president of Badenhansen Corporation, Cornwells Heights, Pa., and A. W. Cash Co., Decatur, Ill., both wholly owned subsidiaries of Riley Stoker Corporation.

He has also been active in Worcester's financial circles, being a trustee of the Peoples Savings Bank; a director of the Mechanics National Bank; and a director of the State Mutual Life Assurance Company, where he recently was most active in the planning of State Mutual's new multi-million-dollar home office building in Worcester. He also has served as a trustee of Worcester Polytechnic Institute, which in 1941 awarded him an honorary degree of doctor of engineering and made him a life member of the corporation. President of the board of trustees of Worcester Academy, Fred was honored there in 1955 with the "Achiever Award" to "a loyal and general alumnus, a respected leader of industrial, philanthropic, and educational institutions."

In 1950, Fred announced the purchase of the Academy's \$33,525 mortgage by the Fred Harris Daniels Foundation, Inc., named for his late father. That wiped out a 60-year debt, and that same year the academy dedicated its new gymnasium in Daniels' honor. In 1946 Fred headed the Golden Rule Fund in Worcester, and it went over the top. In 1950 he presented the Worcester Natural History Society a 340-acre tract of land, and the land is now in use as a summer school of forestry and conservation for young people of Worcester County — a school which is thought to be the only one of its type in the country.

That same year, he and his charming wife, the former Eleanor Goddard of Worcester, presented a 300-acre tract of land at Petit Manan Point, Maine, to Katahdin Council of the Boy Scouts of America to be used as an Explorer Scout camp. The grounds of the Daniels home at 190 Salisbury Street are a landmark

of beauty to Worcester residents. That's the man who is receiving the Isaiah Thomas Award in Worcester, April 29. We're proud of you, Fred!

From Chicago, Jim Duffy, VI, writes that he must be the "last of the '11 men" to become a grandfather for the first time, but he enclosed an announcement to prove it actually has happened. It was one of the most timely and clever birth announcements ever, issued as a "Bulletin" with a gold seal of the United States of Happiness in the lower lefthand corner. It read: "In accordance with the current policy of prompt disclosure of new developments in nuclear fission, announcement is hereby made that on January 31, 1958, the atom that was formerly Mary E. Duffy was successfully split, giving rise to a new element to be known as James Michael McMahon, with an atomic weight of 7 pounds 11 ounces. P. H. McMahon, Chairman; M. D. McMahon, Executive Secretary."

Continuing, Jim wrote: "Last year for the first time in 10 years I did not go abroad. Had planned to go to South and Central America and learn a little about the Incas and Mayas. Had taken inoculations, obtained my good conduct certificates, and was all set, when the trip was called off because of Asian flu. Having had dysentery in Luxor and on another trip in Damascus, I had no desire to have Asian Flu in La Paz. May make another attempt this year. There has been a lot of regular flu out this way. Best regards to you and Sara and to all."

It was distressing to learn from O. W. Stewart early in March that Ray Lord, VI, retired insurance executive, has been very ill. Following a major lung operation at the Deaconess Hospital, Boston, he and his wife are spending the month of March at Longwood Towers, Brookline, where it is convenient for Ray to receive outpatient 2,000,000-volt X-ray treatments at the hospital. O. W. and Gertrude called on the Lords; and although Ray looked quite good, O. W. says he told him the healing process is still painful. At 2:00 P.M. each day, except Saturday and Sunday, he receives his treatments; so they are able to drive week ends to their home on Hillside Road in Wakefield, R. I. "The case is a critical one," O. W. wrote, "but Ray by his conversation shows complete confidence in results and in the ability of the hospital staff." Our thoughts are with you, Ray, and may you have a speedy and complete recovery!

Was so glad to learn that Don Stevens, II, and Lois were able to take their trip to Hawaii, a card from San Francisco dated February 19 stating: "Here we are halfway to Honolulu and halfway through *Bewitching Betsy Bonaparte*, by Alice Curtis Desmond. Don and Lois." That new book by the talented wife of our honorary member, Senator Tom Desmond '09 of Newburgh, N. Y., is another fine historical novel to add to the growing list of Alice's literary best-sellers. Sara and I enjoyed it immensely, and we recommend it to all.

When our illustrious architect, Ralph Walker, IV, and I were chatting at the "Welcome to Dennie" luncheon in New York in early January, I mentioned what a "stark naked" look our summer home

(Civil War period) had in Cornish, Maine, following our removal of a shaky, old-fashioned front piazza. Ralph suggested I send him a picture of "Wellsweep," which I did later; and he has since returned specifications and a sketch showing how we can comparatively inexpensively add wood pilasters, frieze, cornice, and pediment around the existing doorway and install blinds (now stored in the barn) at second floor windows as principal rejuvenation items. Thanks a million, Ralph!

At this mid-March writing we have just learned that on March 17, 18, and 19 at the Palmer House in Chicago there is to be an Atomic Energy Management Conference sponsored jointly by the Atomic Industrial Forum and the National Industrial Conference Board. One of the vice-chairmen of the conference board is our classmate, I. W. (Bun) Wilson, Alcoa board chairman. Also we have one street address change: William C. Davis, Jr., I, 6301 Eleanor Court, Norfolk 8, Va.

Be sure you make your plans to attend Alumni Day at M.I.T. on Monday, June 16, this year. There is always a good nucleus of '11 men there, and it also has the extreme advantage of allowing us to renew acquaintance with contemporaries and enjoy an always interesting program of events, details of which are to be found in the front section of this issue. See you there, I trust!—ORVILLE B. DENISON, Secretary, Chamber of Commerce, Framingham, Mass. JOHN A. HERLIHY, Assistant Secretary, 588 Riverside Avenue, Medford 55, Mass.

1913

The time for our 45th reunion at Oyster Harbors Club is approaching. The first letter of announcement has been out less than a week as these notes are written, and the returns are very gratifying. The ratio of those coming to those who will not is four to one. The number who have paid their class dues is a trifle better, for as usual the dates of our reunion interfere or conflict with other plans of some of our classmates. The burning question is, have you notified your committee as to your plans June 13, 14, and 15?

Howard Currier writes from Santa Barbara, Calif. "Each month when The Technology Review arrives in the mail, I eagerly turn to the 'News of Classes' section, with mixed feelings—I hope there will be found in it some 1913 news, but dread to read of those items which add some of our members to the obituary column. There have been too many of the latter during the past year. Twice a month, here in Santa Barbara, we have a meeting of the Retired Professional and Business Men's Club, and incidental thereto an informal 1913 get-together between Jerry Lane, Stan Parker, and myself. There are several other members of the Club who are retired men from other Classes.

"It is good to hear that our 1913 Reunion in June will be held at the Oyster Harbors Club once again; and, speaking for one, I hope that I will be able to attend. We might as well face it—perhaps this one may be the last reunion for many of us, and in spite of the ravages

of Time those who are still able to keep going under their own power should make every possible effort to attend." End of quote. Thank you, Howard, for your words of wisdom. We shall expect to see you in June.

Just a short note was received from Johnny Welch with the \$5.00 enclosure, and we quote: "From The Technology Review I read that \$5.00 dues are needed for this reunion. Am looking forward to being there and seeing you." An interesting letter has been received from George Richter, in which he suggests that your Scribe couch his news item. Being rather modest in our feeble attempts, we prefer to quote: "About a year ago I handed in my keys at Kodak Park; and according to a plan that I worked out some time ago, I went into semi-retirement, which means spending about half my time in professional work as a consultant in the field of cellulose and cellulose derivatives. Part of this program is in industry; the remaining, on special jobs for Uncle Sam. Uncle Sam's business has taken me to many countries in Europe—seven extended trips during the past three years—while industry has called me to New England on monthly trips for some time now. This schedule allows me enough time to think through some of the multitude of problems that have crowded my desk for the past 40 years, and I have been having fun assembling and publishing in my chosen field of endeavor. I was pleased to be awarded early last summer an honorary degree of doctor of technology by the Chalmers Institute of Technology at Goteborg, Sweden, which is the equivalent of M.I.T. I was unable to be present at the ceremony, but the Chancellor of the University came to Pittsford to make the award in my own home in July. I was particularly pleased because I am the first American to receive this degree from this old university. Mrs. Richter accompanies me on all my European trips and on many in this country. We are having lots of fun and meeting a host of friends. Our home is in Pittsford, N. Y., just seven miles out of Rochester. We have five acres (about), with the back stretch reaching along the Erie Canal. Even so, we are in the midst of the village, which reminds me so much of the old villages in New England. Our home was built by one of the contractors who dug a part of the canal in about 1818. By New England standards, the house would not be considered old; but in this part of the country it is a landmark. Needless to say, if any of the 1913 men come through this part of the country we shall be most happy to have them drop in for a spot of tea or something better. I hear from Gerould Lane quite often. As you know he has retired to Santa Barbara, Calif." Glad to hear from you, George, but we shall expect to see you at the reunion.

Just a short letter from Dave Stern, and we quote in part: "Nothing much of interest about myself. I am still grinding out tin cans, and look forward to seeing you and the rest of the gang at the June reunion." Good boy, Dave, see you at Oyster Harbors Club real soon. Jack Farwell reports briefly, enclosing a pictorial clipping of our own Larry Hart taking part in a ceremony in connection with his

Youth Achievement project, and we quote: "Larry is certainly in the limelight, doing a wonderful job. We quite often accidentally meet at the Engineers Club in New York. Nothing new with me — still working, but not sure why. I am looking forward, with many others, to the 1913 reunion next June." Thanks, Jack for the news and appreciation; we also are looking ahead to Oyster Harbors for that 45th reunion.

You have all heard the quotation which reads, in part: "The mills of the Gods grind exceedingly fine." After reading a letter from Ed Hurst, we feel that Ed certainly either owns or borrowed the afore-said mills, and we quote: "Your splendid class notes reflect a keen mentality plus a singular insouciance which transcends by far anything to be found in the literary outpourings of any other class secretary. For example, you do not dun us for \$5.00 for reunion class dues. On the contrary, the delightful manner in which you let us know five iron men are due and payable, in fact that certain others have already paid, is really a masterpiece of making a payment quite painless. In fact, I wrote out the attached check within five minutes after receiving our class notes. Now regarding the delinquents who seldom send you any news, I must say we are in the majority. Most of us are modest and hesitate to write about personal things of only limited news value. There is nothing wrong with 1913 class spirit, and I think it is a credit to my classmates that they refrain from mentioning minutia or trivia of only a modicum of interest. For example, I have seven grandchildren but Ellis Brewster uses logarithms to count his, so manifestly my small flock is of very minor interest. Again, I have been granted many United States and foreign patents covering inventions in the abrasive field; but why grind this fact into the minds of my classmates, most of whom don't know the difference between man-made and God-made abrasives? However, this 45th reunion business is hot stuff and it should be a rip-snorter — we ought to go in all over, hoof, hair, and hide. Certainly all of the retirees will come out of retirement and once more enjoy the buoyant spirit and inspirational values that only 1913 tocsin can impart. And as for those of us who are active, I see nothing optional about a 45th reunion — sir, it is mandatory. I trust there is no 1913 classmate in jail; even so, I firmly believe Bill Mattson's political pull could get him time out to attend our 45th. Many will travel far and spend much hard earned cash to attend. I have a grand letter from Howard Currier in California, and he and his by far better half are coming to attend and visit with us in South Duxbury in the shade of Myles Standish Monument. Now, Phil, don't beat around the bush or soft-soap any '13 men into coming to the reunion. Tell them, just as you did about the class dues, that they will be fined X dollars if they fail to attend because of procrastination, mental inertia, excessive rotundity, opulence in any form, or just plain lack of 'get up and go.' Kindly accept sincere expressions of high esteem and fond hopes you still enjoy an occasional canter across the Elysian Fields of Utopian Delight." Thanks, my Friend;

your expression of facts and thoughts leaves nothing to the imagination.

It is with many regrets that we must announce the death of an old friend and classmate, Peter C. Lieber. The following letter has been received from Mrs. Peter C. Lieber, 27 West Palm Street, Altadena, Calif.: "My husband, Peter C. Lieber, passed away on November 20, 1957. I am most anxious to have the address of an old friend of his, 'Chick' Giles. He had told me if anything happened to him to be sure to let Mr. Giles know; however, I can find no record of his address. I believe Peter said he was in Texas. Any information you can give me will be greatly appreciated." We have checked our records, also those of the Alumni Office. It is possible that the classmate in question could be William 'Chick' Guild, now director, Education Program, Science Centre, Post Office Box 128, Station A, Saint Petersburg, Fla. Can any other classmate give more definite information? We shall forward our solution to Mrs. Lieber's problem.

Yours Truly has really come out of retirement. I have been occupied as a substitute United States marshal performing court officer in the Federal Courts in Boston. Also, I have taken over the duties of the chairman of the Canton Republican Town Committee. Besides all that, I am a candidate for tax collector in Canton.

This brings our "broadcast" for this month to a close. Next month, we shall give you more news of Howie Rand; Paul V. Faragher; George W. Duncan; Arthur Carpenter; Arthur Laurence Brown; Louis Rosenberg; Paul Cogan; C. J. Berry; and several other distinguished classmates. See you at the 45th reunion. — GEORGE PHILIP CAPEN, *Secretary and Treasurer*, 60 Everett Street, Canton, Mass.

1914

Classmates must have noted that each month in these notes some item has appeared about the retirement of another '14 man. The striking note invariably is how busy and happy they are. Three letters of this tenor have been received during the past month. Perhaps this may even be the general subject for discussion at our 45th reunion next year.

Howard Morrison strikes this note in his letter by writing: "For about a year I have been busier than ever doing the things I have wanted to do, for after all retirement is just a change in emphasis from the demands of business life to cultivation of the art of living."

While Morrison still retains his winter home in Greater Boston, from June to December he moves to his farm at New Boston, N. H., where he has about 200 acres of forest, a trout brook, and a mile of front on the Piscataqua River, complete with a swimming hole. Howard calls attention to the fact that the latchstring is out to all classmates, including refreshments served.

One might think that after these several years retired to Maine, Dean Fales would have caught up on his retirement, but here is what his letter reads, in part: "In one month this winter we went up through the mountains 16 times. I am

busier than ever testing cars, but now I drive the ones I want to."

Dean also says that Maine was more comfortable than Florida this winter. Maine has heated houses, and up there also the people know how to plow the roads. He only went to Florida for a week this year to help out at the Sebring Auto Races.

Alden Waitt — one of the 105 retired generals residing at San Antonio — says he is busier than before retiring. A newspaper clipping from Portland, Maine, sent by Dean Fales, tells of Alden's voluntary work among the school children of San Antonio, trying to quicken their interest in the sciences. Alden is advisor, in addition, to the local district science fair. He is also chairman of the San Antonio section of the American Chemical Society and is chairman of the Southwestern Regional Conference to be held next fall. Fourteeners may perhaps remember from the class notes that on his retirement Alden took up painting. That his work is top-notch is signified by the fact that in a district exhibition he won two first prizes. One of his canvases is also being exhibited on a Texas State Tour. To complete the picture, Alden is president of the River Art Club.

One classmate who has not retired is J. Warren Horton, who is chief research consultant to the Navy Underwater Sound Laboratory at New London, Conn. On March 6 he was awarded the Navy Distinguished Civilian Service Award for his underwater sound research. Horton did outstanding work in this field during both World War I and World War II, as well as when he was chief engineer of the General Radio Co. Although his world war services were of a temporary nature, after World War II he joined the Navy Underwater Laboratory on a permanent basis.

Word from his widow has been received of the death of Carl N. Anderson at Portland, Ore., on September 15. Although first located in the Midwest, for the past quarter of a century he has been a consulting and industrial engineer in the Northwest. Because of his distance from the East, Anderson has not been able to take part of any of our class activities. In 1915 Anderson married Louise Pirtle who, with a son and daughter, survive him.

Although he subsequently became a member of the 1915 Class, Paul W. Shedd has always been considered by his associates as a '14 man. Shedd died at Keene, N. H., on January 13. For many years he had been a partner of the drug establishment of the Bullard and Shedd Co. in that city. No Fourteeners will ever forget Paul and his brother's twin acts in the Tech Shows. — H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N. J.

1915

The Class will hold a cocktail party at 4:00 P.M. on Alumni Day, Monday, June 16, at the M.I.T. Faculty Club, 50 Memorial Drive, Cambridge.

Bur and Mrs. Swain left in January for a winter in Guatemala on a United Fruit

ship. Then, on January 21, Ed Sullivan and his sister, Ann, whom many of you know, sailed on the *Caronia* for a 108-day round-the-world cruise. From Trinidad, their first port, Ed wrote to the "Gang" at the New York class dinner: "First Ann and I want to thank you for the beautiful flowers. We received them just after we sailed, and it helps greatly that dreary moment when all our friends have gone ashore (a few a little unsteady on their feet) and we have turned to a ship full of strangers (380). We started the trip on the wrong foot and for the first 24 hours we were tossed about. Yes, for the second time in my life I lost my dinner. I guess I am getting to be a sissy. But yesterday and today have been perfect and the water in the swimming pool is 80°F. and feels warmer. Regarding the passengers: the three \$30,000 suites are occupied. More than 40 percent of the passengers are rich widows out for a good time. I have never met a more congenial class of people. So far I would advise any of the Class to come next year, as it is almost like traveling on your own yacht. I have enjoyed every minute. Anybody wanting full details and telephone numbers of the widows meet me on the dock in New York on May 9 and I am sure I will have all details; or, better still, fly out and meet the ship and have leisure to get better acquainted. We now have five bottles of champagne and \$40 worth of cocktails, so I guess we will not go dry. Best regards to all the fellows and kisses for Fan."

What's the use to comment on a letter like that — we'd only show our envy! But we'd like to check up on the occupants of those swish suites, and maybe the remaining bachelors in the Class could look over that prospect list of rich widows! — AZEL W. MACK, *Secretary*, Apartment 26A, 100 Memorial Drive, Cambridge 42, Mass.

1916

From Boston comes the report (via Ralph Fletcher): "On Monday, February 24, the Boston group had its annual dinner at Joseph's, just off Copley Square, with the following classmates present: Sandy Claussen, Bill Brown, Emory Kemp, Bridgie Webber, Harold Russell, Bill Drummey, Jack Woods, Bob Crosby, Hy Ullian, Izzy Richmond, Steve Whitney, Bud Kaula, and Ralph Fletcher. Through the annual dinner or the reunion and Alumni Day program most of these men are together at least once, and in most cases twice a year. They respond wonderfully, even on the shortest notice.

"Observed throughout the dinner were: Steve Whitney and Ralph Fletcher discussing the value of skiing as an aid to keeping young and fit . . . Sandy Claussen telling of the greatness of recently deceased Chuck Loomis . . . Bill Brown telling of his many stretches of strenuous snow shoveling in this very stormy New England winter, even though only a few months ago he suffered a heart attack, and attributing his recovery and good condition to a wonderful new and revolutionary treatment which he is receiving . . . Bridgie Webber telling of the many fine qualities which permeated the lives of Joe Minevitch and Tom Berrigan, both

now deceased, and also conveying to the group the best wishes of Dan Comiskey, who was at home nursing a cold . . . Harold Russell suggesting various ways for class members to get together more often . . . Emory Kemp telling about his trip to Florida, which was to begin the following day and which will be pleasantly interrupted by visits to Arvin Page in North Carolina and Dina Coleman in Kentucky . . . Bill Drummey and Jack Woods making plans for Bill to stop at Jack's home in Cohasset for dinner on one of those nights when Bill is passing through on his way to his home on the Cape . . . Bob Crosby saying that when retirement comes the first thing he will do will be to clean his cellar . . . Hy Ullian enthusiastic about the coming reunion and already making plans to be on hand . . . Izzy Richmond looking as fit as ever and nearing tip-top shape for his challenge match with Jap Carr on the tennis court . . . Bud Kaula graciously accepting all the nice compliments on his shiny hairdo. It was a very pleasant evening for all."

Bits from here and there. Dick Hunne- man missed the recent dinner in Boston because he had an important meeting at the Boston Yacht Club. He is chairman of their membership committee. Charlie Lawrance felt it was a little too far for him to drive to Boston for the dinner, but he said he will be looking forward to the reunion in June. Howard Hands responded that he would be 1,500 miles away at the time of the dinner and could not attend. Doug Robertson was in Nassau at the time of the dinner, and George Crowell was in Florida then. Someone reports seeing Bridgie Webber at a pamphlet rack fingering one entitled "How To Name the Baby." When questioned about his interest, he said he was looking it over before sending it to Ralph Fletcher.

It was good to hear from Hovey Freeman after his recent brief illness, as he writes: "I am now out of the hospital and resting at home and hoping the doctors will let Marjorie and me fly down to Nassau this week end for a couple of weeks to visit our kids and see our youngest son and his wife when they sail in from their trip around the world from Hong Kong."

We've had a mighty interesting letter from Vert Young in Bogalusa, La. — it's so loaded with the kind of stuff we want, it's going to be hard to condense it. For all of you traveling 1916 men, listen to his last paragraph first: "Living in the deep South has been most enjoyable, but I see all too few of my old classmates. Tom Little and Art Shuey have both been here, and I saw Kem Dean in Houston. I'm only an hour and a half from New Orleans, and can send a car down on short notice — so pass the word along that the latchstring is out." And his first paragraph was most comforting to your Secretary: "In my 20 years in the deep South, it seems to me I've spent 19 of them trying to raise money for first one cause and then another, so anybody trying to raise a bit of news for the 1916 column of *The Review* deserves the sympathy and support of one who has likewise suffered!" Back in 1955, the M.I.T. Register showed Vert as executive vice-president and manager of the Mill Division of Gaylord Container Corp. in Bogalusa. Apparently in November,

1955, Gaylord merged with Crown Zellerbach Corp., whose headquarters are in San Francisco and most of whose operations prior to the merger were in California, Oregon, Washington, and British Columbia. The merger makes them the second largest in the pulp and paper field in the U.S.A., and Vert finds himself president of the Gaylord Division of Crown Zellerbach and a V. P. of Crown Zellerbach. They make nearly everything in the line of papers, cartons, fibre containers, and bags. "We are now in the process of building a new mill at St. Francisville, La. (where Lev Lawrason '17 used to live), for the manufacture of writing papers. This is a joint venture with Time, Inc. Last year I lined up a site for another new mill at De Ridder, La., to be built when market demand warrants. Lining up a mill site is quite an experience, especially in southwest Louisiana, where everyone thinks he has a fortune in oil underground, and a few have. Other excitement was a hunting trip to Alaska three years ago with my good wife, Sylvia. She got a beautiful caribou and I got a poor one, but I also got a fine moose. If any of the brethren like to hunt, that's a must in the way of a wonderful trip. In August we plan to go again if our legs hold out, this time for mountain sheep and possibly a grizzly."

We were glad to have word recently from Merrill Pratt in Birmingham, Ala. He continues as president of Continental Gin Company, manufacturers of cotton ginning machinery — conveying, elevating, power transmission equipment — with factories in Atlanta, Birmingham, Dallas, Memphis, and also Prattville, Ala. Merrill says if any of you are down that way, call him up and he'll be happy to show you the city.

Kem Dean sends his regards to all the boys, writing from Houston, Texas, under a letterhead that reads: "K. Dean and Company, Spot Cotton Brokers, Cotton Exchange Building, Houston 2," with membership on the Houston Cotton Exchange, the Texas Cotton Association, and the American Cotton Shipping Association. Last summer, Kem says, he and his wife flew to San Francisco where they had never been before, then went down to Los Angeles and had a couple of days with Lev Lawrason, one of his good friends in the Class (but who is officially recorded as '17). "Lev has a lovely home up in the hills at Palos Verdes Estates and operates a very interesting plant where he manufactures potassium iodide and some other products from iodine, the source of which comes from abandoned oil wells which pump salt water." Kem has five grandchildren, four boys and one girl. Three of the boys live in Shreveport, La., and the other boy and the girl live in Houston.

We mentioned Bob Wilson's retirement briefly in the April notes, but since then we got hold of a news release dated February 24 which really tells the story of his brilliant career. Incidentally, he was one of the individuals noted in the March issue of *The Review* under the heading of "Twenty-Five Years Ago." In that item, it was stated that Bob then (1933) was receiving congratulations on becoming vice-president in charge of research, Standard

Oil Company (Indiana). Of course, around New York we all think of Bob when we see the Amoco signs. The release said Bob's 13-year chairmanship was coming to a close on March 19 upon "normal retirement" at age 65. The release lists many honors that he received, some of which we never knew about. Here's an extract: "Dr. Robert E. Wilson is internationally recognized as one of this nation's outstanding figures in both business and science. He is widely known as a leader in movements for supporting education and religion. He has contributed much of his time to government service and to oil industry affairs. He is a director of two of the nation's foremost banks, the Chase Manhattan in New York and the First National in Chicago. The scientific world knows him for his more than 100 published technical papers and the 90 patents he holds. Among the important medals and awards bestowed upon him are the Chemistry Industry Medal (1939), the Perkin Medal for applied chemistry (1943), the Lord Cadman Memorial Medal of the British Institute of Petroleum (London, 1951), the Northwestern University Centennial Award (1951), and the Washington Award for engineering (1956).

"Dr. Wilson has been awarded honorary degrees by 15 institutions. He is a native of Pennsylvania and a graduate of the College of Wooster, Ohio, where his father was a mathematics professor. [The release neglects to say that he was a graduate of M.I.T. in the Class of 1916, but you will notice that *we* are not neglecting to say this!] He was a research associate at M.I.T. shortly before World War I. He served as a major in the Chemical Warfare Service during the war, and then returned to M.I.T. to become director of research and an associate professor. In 1922 he entered industry as assistant director of research at Standard's Whiting, Ind., refinery. He became head of the company's new development and patent department seven years later, and then a director and a vice-president. From 1935 to 1944 in New York City he headed the Pan American Petroleum and Transport Co., a subsidiary which later merged with Standard Oil. He returned to Chicago in January, 1945, to become chairman of Standard Oil. He is a member of the General Advisory Committee to the Atomic Energy Commission. He was chief petroleum consultant for the government in the early days of World War II, and later was chairman of the important Petroleum Industry Committee on Petroleum Economics. He is an honorary vice-president of the National Association of Manufacturers, a director of the American Petroleum Institute, and a member of the National Petroleum Council, an advisory group to the government, and of the National Industrial Conference Board. Dr. Wilson also is a member of the National Academy of Sciences, the American Philosophical Society, a life member of the Corporation of M.I.T., and a trustee of the College of Wooster, the University of Chicago, the Museum of Science and Industry at Chicago, and the Carnegie Institution at Washington, D.C." Congratulations, Bob, and *now* let's take it easy-er.

Another of our classmates who has reached the retirement age is George Petit. George recently wrote: "Having recently 'retired' as supervising engineer in The Travelers Insurance Company Engineering Division, I have been reappointed by The Travelers Company as analyst in economic and insurance trend research, working with Thomas F. Malone, Doctor of Science, Director of The Travelers Insurance Company's Research Center and formerly professor of meteorology at our Massachusetts Institute of Technology." George also keeps pretty busy preparing and distributing a periodic newsletter known as "Trend Analysis" in which he presents to his many subscribers a review of current business trends, with particular reference to the construction industry. His graphs for "Recognizing Construction Cost Trends" and "Measuring Momentum of Cost Trends" appeared in the *Engineering News Record* as far back as 1952, and recently were employed again by the *Engineering News Record* in their 20th Annual Report on Construction Costs.

Saul Hoffman writes from Chicago, where he is central west sales manager and representative of Riverdale Drapery Fabrics (a division of United Merchants and Manufacturers). Saul's elder son Myron received his S.B. at M.I.T. in 1951; went on to get his master's and doctorate at Tech; was appointed assistant professor of aeronautical engineering; then in 1956 enlisted in the Air Force, doing research in his field. Younger son, Allan '53, also got his degrees at Tech, including a doctorate in 1957 in chemical engineering and practice; he was awarded a Fulbright Scholarship for post doctoral research at the Academy of Science in Paris. Saul has a "treasure" in a 12½-year-old daughter who, as he says, "is not only brilliant but beautiful as well."

A news writer from Lawrence, Mass., back in December wrote proudly of a native son, our Charles J. McCarthy. Charlie, as chairman of the board of Chance Vought Aircraft, Inc., and his associates, together with Vice-admiral James S. Russell, chief of the Bureau of Aeronautics (since has transferred), shared in the honors when they were awarded the Collier Trophy, sponsored jointly by *Look* and the National Aeronautical Association, for "the greatest achievement in aviation in America, the value of which has been demonstrated by actual use during the preceding year."

According to *Iota Muse*, M.I.T. Phi Gamma Delta periodical, Dave Patten is working as a consulting engineer in Standish House. Many will be interested to note another activity of Dave's. We understand he's spending what free time he can find at the moment raising funds for the Boys Clubs of Boston and their Boy Ambassadors Program, a program which will permit boys from this country to visit and live for brief periods in foreign countries and boys from foreign countries to do the same here. As Dave's summary of the program states: "It is hoped that the boys selected, through their future influence and leadership positions in the countries of their birth, will form the nucleus of a great force for better understanding and world peace."

Maynard Guss writes from the California beauty spot, Santa Barbara, where he settled in retirement in 1948 after 32 years with the engineering department of Standard Oil, mostly in China. This is a very popular place for retired people. Maynard belongs to a Retired Business and Professional Men's Club there with over 250 members. He is treasurer and trustee of the local Unitarian Church and has just moved into a brand new house on the edge of the canyon. The way he says it, it sounds pretty good!

Hen Shepard, in commenting on the snapshot at the reunion last June, said: "The girls look young, but I must say that the boys are beginning to look rather frail." Hen should come along and help to improve the average! He is still enjoying himself as a manufacturer's representative, with a line that includes Rockwell and Brinell Hardness Testers, Micro Hardness Testers, and Optical Comparators. Being his own boss allows him to take off all the time he wants to for his summer place in Randolph, N. H., and for his old car activities. "My 1914 Stanley is all restored and runs beautifully. Now I am starting to rebuild a 1909 Cadillac which used to belong to Dr. McGrath, one time medical examiner for the city of Boston. I remember the car when it used to stand outside the St. Botolph Club at 8 Newbury Street in 1912-13-14 when the doctor went to lunch every noon. The car is completely worn out, so it will take me several years to make new parts as may be necessary. As a hobby, the only thing to be said about it is, 'It is better than wine and women.'"

We are very sorry to have to report the death of Murray Graff on March 3—someone your Secretary had been meeting regularly at the Denver airport on his trips to New Mexico over the past few years. Our last visit was last September, and at that time Murray had just taken a new job with C. H. Hoper and Co., utility engineers, in Denver. He was the picture of health and enthusiasm. He apparently had two sessions of the flu after Christmas, and with the flu came complications. He was taken to the hospital on February 13 and passed away less than three weeks later. Letters of sympathy have been sent to his widow.

Jim Evans reports seeing Joe and Mary Barker off for Europe via Trans World Airlines, on February 27. Says Joe is starting a collection of small traveling bags. Jim also reports final arrangements for the 1916 dinner meeting, which is to be held on May 27 at the Biltmore—ladies invited. If you haven't already signed up, just call Jim Evans at Johns-Manville or Joe Barker at Research Corp. or Bill Barrett at Metropolitan Life (all in New York City). Or call your Secretary—see address below. Special feature: Herb Mendelson's movies of Herb and Vi on their 1957 African safari.

One of the last things that Ralph Fletcher wrote before he left with his wife in March on a skiing trip to Switzerland was: "To one and all 1916'ers: come, be sure to come, to the 42nd reunion in June—at Chatham Bars Inn, Chatham, Mass., way out on the southeast end of the Cape. Advance indications promise a fine attendance. Remember the dates: Friday, Satur-

day, and Sunday, June 13, 14, and 15. We'll be looking for you!"

The 1916 class luncheons at the M.I.T. Club of New York City (first floor, Hotel Biltmore) on the Thursday of the first full week of the month are well attended. If you are in or near N.Y.C. on one of these days (June 5, July 10, and so forth) drop in at 12:00 noon and meet and eat with your classmates.

The column windup wouldn't be a column windup without a request for more news. Appreciation goes out to the many who have been responding generously. Should you be writing today? A few lines will be welcome. — HAROLD F. DODGE, *Secretary*, 96 Briarcliff Road, Mountain Lakes, N. J.

1917

Irving Crosby always seems to be on the move in connection with his consulting geology work. He writes from Manila: "I have been examining dam sites for the National Power Corporation of the Philippines. This is my eighth trip to the Philippines. There are two projects in the mountains of Northern Luzon, one near Manila, and two on the southern island of Mindanao. I arrived here November 24 and have been enjoying salubrious weather except during a cold wave when arctic blasts from Siberia made people shiver when the temperature dropped down to 61°F."

Ray Blanchard, besides his job as president of Hood Rubber Co., is a trustee of the Melrose (Mass.) Hospital Association and has been made chairman of the building committee.

John DeBell recently acted as a symposium chairman at a meeting of the Northeastern Section of the American Chemical Society in Huntington Hall, M.I.T.

Stan Hyde writes of his time in and about Bath, Maine, where he is employed by the Hyde Windlass Co. (no relationship). Beside work in the Assembly Department, where he originated an improved timekeeping system, he also is a resort proprietor of a nearby motel. He gets on juries and is treasurer of the Portland Chapter of the American Society of Tool Engineers.

Fred Stearns has been at Northeastern University since 1920 and is professor of mechanical engineering. He writes: "I have five grandchildren. A sixth was killed in an automobile accident at which time my son's wife was also killed. Since then my wife and I have been with my son and his two boys in Attleboro Falls, although we still maintain our home in Melrose, Mass.

"I'm interested in various civic and church activities, being at present a member of the Melrose Hospital Association; an incorporator of the Melrose Savings Bank; and a deacon at the First Congregational Church, where I was treasurer for 20 years.

"I belong to a number of engineering societies including the American Society of Mechanical Engineers, American Society for Engineering Education, American Society for Metals, and Engineering Societies of New England.

"It might be of interest to know that

we are an M.I.T. family, as our son graduated in 1946 and my son-in-law in 1947.

"While we were with my daughter at Chappaqua, N. Y., during the Christmas holidays, we had dinner with Burling D. Wells '17 in Danbury, Conn. Wells has lived in Danbury most of his life and is a vice-president of the Mallory Hat Co. in Danbury.

"I have enjoyed being at the five year reunions and seeing the classmates, some of whom I have not seen since graduation in 1917."

On February 4 the usual 1917 gathering was held before the Midwinter Meeting. Eighteen of us got together at the Sky Room of #100 Memorial Drive, where we had a buffet supper, and then went on to Kresge Auditorium. The evening was devoted to a visual report of the Physical Science Study Committee in its relation to teaching in the secondary schools. At our gathering were, Beaver, Penn Brooks, Tuttle, Dudley, Dunning, Lunn, Stevens, Thomson, Platt, Dickson, Gargan, Lobdell, Gilmour, Chase, Flaherty, Childs, Gartner, Stan Lane.

The regular monthly class luncheon at the M.I.T. Club of New York (Thursday of the first full week of each month) brought out the following "regulars": Ed Payne, Bert Morton, Bill Neuberger, Joe Littlefield, and your Secretary. Bill Neuberger contributed an optimistic comment by stating that he recovered from a bad cold with unusual speed upon being told that M.I.T. engineers live, on an average, to an age of 77 years. Joe Littlefield assured everyone that the business slump would soon be over, which added to the general optimism that seemed to dominate the luncheon. The absent M.C. of the class luncheon, Dix Proctor, is touring around Africa via the Farrell Lines steamship *African Planet*. He writes: "We are steaming smoothly eastward again, due this evening at Port Elizabeth. The weather is just about perfect, and we are in our shorts. Even when crossing the equator, we have had very little real hot weather. The sun has been hot, but a nice breeze always made even 'deck-chairing' comfortable. We had two most delightful days in Capetown and managed to see a lot of the surrounding country." Dix and wife are visiting a number of other places, but the only one that could be deciphered from Dix's handwriting was Zanzibar. Needless to say, Dix is enjoying life.

Ken Bell, in a letter to Walt Whitman, reported from Kandy, Ceylon, that he is combining a lot of sightseeing with his four months' survey of the leather industry in Pakistan. He sailed from New York on the *Constitution* on October 4 and will be back home by the time these notes are published. Ken will have completed a trip around the world with stopovers at Italy, Greece, Pakistan, India, Bangkok, Hong Kong, Japan, and Hawaii. His comments on Pakistan are of particular interest: "West Pakistan is desert in the Sind area, near Karachi. 750 miles north, Lahore is green from irrigation. As this was the center of the Mogul empire, the architecture is similar to that of the 'Taj' by the same architects. East Pakistan is low, wet, and inhabited with Mongol types; and the poverty is abject. Ceylon is green, of course, due to its heavy rainfall; and it is

cleaner, without the dust of India and Pakistan. Also, as it has rubber, tea, rice, pepper, pineapples, cocoa, and cocoanuts, it is relatively prosperous. While much of it is low and wet, the center is mountainous and most of it is heavily wooded. The government is trying to encourage cultivation by giving two or three acres to natives if they clear and cultivate it. India is more stable than Pakistan, due to the fact that Pakistan has lost leaders by death, while Nehru has kept India in rigid control. But poverty is terrible there, too." (Why do we ever look for outside entertainment at class reunions, when we have travelers — undoubtedly with a lot of pictures — available to lecture on their experiences?)

A February news report states as follows about Alfred J. Ferretti: "Professor Alfred J. Ferretti, Chairman of the Department of Mechanical Engineering at Northeastern University, has been named a fellow in the American Society of Mechanical Engineers. He was presented a certificate recently at a meeting of the Boston section of A.S.M.E. by Edward H. Barry, who said in his citation that the 'phenomenal growth of the Mechanical Engineering Department at Northeastern is due in large part to your vision, leadership and energy.' Professor Ferretti was a prime mover in establishing the Graduate Division of the College of Engineering. An honorary member of Tau Beta Pi and Pi Tau Sigma, he received a medal in 1955 for contributing the most to the progress of the A.S.M.E. section in Boston." Congratulations, Alfred.

The *Lexington* (Mass.) *Minute Man* reports that on February 14: "Mr. Raymond Stevens, President of Arthur D. Little, Inc., will speak to the student body of the high school and congratulate those students newly elected to the Honor Society. Mr. Stevens is father of the Lexington Plan, now in operation in several schools in this area." The newspaper continues to outline a few of the extracurricular activities of our class president, among which are: fellow of the American Academy of Arts and Sciences, president of the Corporation of the Woods Hole Oceanographic Institutions, past chairman of the Advisory Board on Quartermaster Research and Development, and holder of a gold medal from the American Institute of Chemists for his contribution to research management. Now that the Ex-Secretary is not in a position to stifle news about himself, we can get better acquainted with all the things that have kept him busy.

Alumni day is scheduled for Monday, June 16; and this year we will have the pleasure of hearing a concert by the Boston Pops orchestra in Kresge auditorium, as we did last year, after the dinner in the evening. Sign up early.

Isn't it true that "Nowadays when your ship comes in, the government sees that it is docked." — W. I. McNEILL, *Secretary*, 14 Hillcrest Avenue, Summit, N. J. STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

1918

Einstein made much that we learned in physics no longer unalterable law, but

The Review, with rigid discipline, insists that the class notes be in hand two months ahead. Thus the snow along the path to my garage is still four feet and five inches deep and the piles beside the garage doors are six feet and 8 inches deep. (Who says the 60-year-olds mustn't shovel snow?) But you will read this in May, which we shall appreciate all the more because of having enjoyed the winter. Today is an inspiring March day. My sweetheart and I have just come in from a comradely walk in the warm sunshine. It does not fool us. We know that March in New England freezes and thaws, snows and rains, is windy and benign; but that is the kind of two-edged month it has to be in order to turn winter into spring. When these notes are finished I must leave to be in a plant a hundred miles away before seven tomorrow morning. The sweat and grime of industry and the market place make this Eden all the more precious. Speaking of the market place, those well-healed classmates who have certificates in their strong boxes attesting to part ownership in Chemical Fund, Inc., will observe on the notice of the annual meeting that one Julian M. Avery, Course XIV, is up for re-election as a director. He is described as a chemical manufacturer and a technical advisor to the Ethyl Corporation. This must be our own Julie, who lives at Clapboard Ridge Road, Greenwich, Conn.

Courtesy of the ever alert Sax Fletcher, comes the following concerning further recognition for Mike Flett, Course V, of detergent fame. Lawrence Flett, consultant to the National Aniline Division of Allied Chemical and Dye, has been chosen to receive the 1958 Gold Medal of the American Institute of Chemists. The award is made in recognition of Flett's "research achievements, his devotion to the profession of chemistry, and his long and unselfish promotion of the professional welfare of fellow chemists through the medium of scientific societies." Flett developed the first commercial synthetic detergent from petroleum and pioneered this field to make detergents available to the public. He holds more than 75 patents on detergents, dyes, antiseptics, and organic chemicals. Presentation of the medal will be made at the Ambassador Hotel in Los Angeles during the A.I.C. meeting April 10 and 11.

Pete Woodland, Course IV, more formally addressed as Lester N., was honored as the Lion of the Month (service club, that is, not social) by his fellow members of the Melrose club. After joining the Melrose club in 1929, he became president in the club's fourth year and served two terms. He received a Key member award in 1935, a 15 year perfect attendance award, and received his 25 year Old Monarch award in 1954. He will receive a 30 year Old Monarch award in 1959. Woodland served on the Governing Board Lions 33d District for six years, including three of these years as chairman of the extension committee. In 1934 and 1935 he served as district governor, and only ill health prevented him from becoming the Number One Lion of the 33d District. However, most outstanding in his career as a member of the Melrose Lions Club, the Lion of the Month has

been chairman of the Eye Clinic Committee since its inception — a singular honor in any organization, with its numerous details, careful consideration of applications, involving many hundreds of hours of time. Pete received a commission in the Navy in World War I. He served for 18 years as a director of the local Y.M.C.A., acting as its president for four years. He also is a member of the local American Legion, the Masons, Melrose-Wakefield Hospital Association; is a past president of the East Side Parent Teachers Association; and served as director of Melrose Savings Bank and the West Medford Co-operative Bank. He served five years on the Melrose School Committee and was very active in one of the local churches, serving 15 years as superintendent of the Sunday School. He is a member of the New England Botanical Club, an honor which is bestowed only on very rare occasions. Hunting all over New England, Pete has found and identified 700 wild flowers. He is presently an employee of Raytheon Manufacturing Company, as supervisor of new construction work. During his lifetime he has specialized in architectural engineering, and has been recognized as a leader in this field; he is still in business with his father, who is active though nearing his 91st birthday.

From the *Iota Muse*, otherwise known as the periodical published by the M.I.T. Chapter of Phi Gamma Delta, comes a minute item to the effect that George Donald Bradley is doing well out in Seattle, Wash., as the owner of Dunning Bradley Company. What service said company performs deponent sayeth not. I was solemnly promised on the precious copper of 200 miles of telephone wire that details of reunion plans would be available to me before the deadline when these notes should be in the mail. Somebody goofed, for nothing is at hand. However, Alumni Day will be June 16, held entirely on the campus, with the Boston Pops performing in Kresge Auditorium during the evening. Also, it can be repeated that our special get-together will be held in the Treadway Inn just outside Falmouth on Cape Cod, June 13 to 15. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N. H.

1919

Robert A. Montgomery writes from Winter Park, Fla., that they are still enjoying living there in spite of the extremely cold weather. He says also that they enjoyed "a three months' trip to Mexico this past summer. Were in Mexico City at the time of the earthquake, but fortunately were not hurt." Good to hear from you, Bob.

The card received from Ed Moody this month indicates that he is indeed a busy fellow. Look at this: "Beyond designing and building 10 or 12 new fire engines per year, plus 15 or 20 oil tank trucks and 6 or 8 volumetric provers for cities, counties and states, plus calling a square dance now and then and being treasurer of the New Hampshire Folk Federation and president of the North 6 Baton Callers Association, being a baby sitter occasionally for eight grandchildren, and carefully side-stepping all chances to be a Gentle-

man Farmer — life is just a humdrum." Ed's address now: R.F.D. #1, East Pepperell, Mass.

Everett F. Doten reveals that recent developments have put him in Missile Operations at the Chrysler Corporation.

We note in the *Indicator*, official journal of the New York section of the American Chemical Society, that our Theodore Shedlovsky (with Rockefeller Institute) was chairman of one of the afternoon sessions of the section's "Meeting-in-Miniature" held at the Hotel Roosevelt in New York City on March 4.

Fred Given was in Manhattan the early part of the week of March 3, but unfortunately couldn't wait for the Class of 1919 luncheon which was held on Friday, March 7. However, he sent his regards via your Class Secretary to those who were able to attend, and wants to be remembered to all of you. Fred is with the Sandia Corporation in Albuquerque, N. M.; and from what we hear from those in the know, he is doing a great job of it there. In addition, he is running the Albuquerque M.I.T. Conference.

Speaking of Class Luncheons: The 1919 Luncheon (in New York City) is held on Friday noon of the first full seven day week in each month . . . i.e., May 9, June 6, and so forth. Do make it whenever you can! The place? M.I.T. Club of New York, Biltmore Hotel.

New addresses: let us hear from you, fellows! Eaton Webber, 20 Holden Road, West Newton 65, Mass. J. Herbert Gould, 21 Ware Street, West Somerville 44, Mass. Frederick W. Barney, Kanuga Road, Route 3, Box 235, Henderson, N. C.

Don't forget Alumni Day, Monday, June 16. Hope to see you there! That's all for this time. Please let us have your news notes! — E. R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N. Y.

1920

Roots-Connersville Division of Dresser Industries, Inc., announces the appointment of Donald Dowling as engineering consultant with headquarters at 122 East 42nd Street, New York. Don has been associated with Roots-Connersville since 1925 and has been manager of their New York office for the past 26 years. He is a member of the American Society of Mechanical Engineers and the National Society of Professional Engineers, and his company gives him credit for extensive contributions to the design and development of their products.

Robert Burchell has moved from Chicago to Yorkville, Ill. Robert Rowe has left Corpus Christi, Texas, and is now in the nation's capital. He lives at 1610 New Hampshire Avenue, Northwest, Washington, D. C.

We are hoping that a goodly number of classmates will be on hand for Alumni Day, Monday, June 16. Once again, everything will be on campus, which makes for a very successful and enjoyable time. Maybe some of us can get together during the day and discuss plans for the great 40th reunion in June 1960, which is creeping up on us. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

Join the M.I.T. Club of Cuba! If you ever expect to work or visit in the lovely Queen capital city of the Caribbean, join this outstanding group of the kindest and friendliest alumni to be found anywhere. Even if you never expect to land in this island paradise, so aptly called the "Pearl of the Antilles," join the Club anyhow, for the prestige of being associated with men whose love and loyalty extends to M.I.T. and all those connected with it to a degree which is not surpassed by any Alumni organization. The wives of these dedicated men magnify the friendly courtesy and add to it the beauty and grace which charms the lucky guest of the M.I.T. Club of Cuba. Here's to the first Alumni club ever to play host to a class reunion!

If we sound a bit wistful and nostalgic in reporting on the glorious midwinter reunion in Havana of the Class of 1921, it is because the anticipated pleasure of those six days in Cuba was so far exceeded in the actual realization that our departure was like the shattering of a magnificent dream. This was a perfect reunion in the planning, the program, the timing, and the weather—everything was ideal for our complete enjoyment, and we can never adequately express our thanks to those who made it happen that way. Especially to our hosts, the officers and members of the M.I.T. Club of Cuba and their lovely wives; and to our very special hosts, Helier Rodríguez and his charming wife, Graciela, go the sincerest thanks and everlasting gratitude of a very appreciative group from the Class of 1921, who had the time of their lives. The members of the committee in charge of the first reunion of any M.I.T. class to be held outside of the United States—Chairman Ted Steffian, Chick Dubé, and Roy Hersum—richly deserve well earned plaudits for having done a stupendous job, supplemented by sage advice from Helier and Graciela. We know we speak for everyone in the Class of 1921 in saying "thank you" to all these wonderful men and women who went out of their way to insure that we had a good time.

Pleasant memories of that kaleidoscopic round of magic events spin through our mind in fast and ever-changing patterns that defy fixing one scene or a succession of them long enough to enable adequate description. We left off last month where Helen and Class President Ray St. Laurent phoned that they were driving to Miami, as did most of the U. S. contingent, to hop over to Havana. Helen, Ray, Maxine, and your Secretary had been invited to stay at the palatial Rodríguez home in suburban Marianao and were scheduled to arrive there Thursday afternoon, the day before the formal start of the reunion. We managed to make it non-stop from Idlewild over the snowbound East Coast (Florida, too, and no green showing until we were over Cuba), but the weather delayed the St. Laurents and almost caused a Stateside search to be instituted. Most of the group arrived on Friday by air and were met at the José Martí International Airport by members of the local Club and escorted to the Hotel Nacional headquarters. By coinci-

dence, Mary and Ed Ash'22 were in Havana with their guests, Judge Halpert and the McDonoughs, and were joined by the Rodríguez and Clarke couples at dinner that evening in the elaborate night spot of the new Hotel Riviera.

Saturday morning, Washington's Birthday in the States, the entire group of escorting couples from the Club drove the visitors through old and new Havana. We saw Morro Castle; the 10-mile crescent sweep of the Malecon drive along the Gulf; the many old forts; the *Maine* Monument decorated for the 60th anniversary of that electrifying event which led to Cuba's independence; the elaborate Colon cemetery; the inspiring Merced Church; the old walled city; the tremendous sheltered harbor; the gorgeous Capitol building; the modern civic center; a cigar factory; the manufacture of alligator leather articles; Bacardí (Note for Lobby: Made by a member of the Class of '17); the Prado; Central Park; Plaza de Armas; the University; then to Cathedral Square where, flanked by Ponce de Leon's home and others of the Spanish nobility, stands the Columbus Cathedral, which once held his remains. On the fourth side of the square is the Rum Havana Club, where we all gathered for cocktails, including the famous Cuban frozen daiquiris, than which there are no whicier anywhere!

Next the group traveled stately Fifth Avenue through the suburbs to the extensive Havana Country Club for lunch. Perfect golf greens studded with the ubiquitous royal palms, an inviting pool, guests lunching on the spacious tiled terraces—here was a fairyland in sharp contrast to the frigid bleakness lying just five hours northwards. Delicious food, with many local delicacies, was the icing for the cake in that setting. President Rafael Laredo'44 of the M.I.T. Club of Cuba told the group of some 65 Alumni and guests how much he and his associates welcomed the Class of 1921 and hoped their stay would be enjoyable. As souvenirs of the occasion to aid in the rendition of Tech's famous song, appropriately decorated M.I.T. steins, made in Cuba, were presented to the men; and companion M.I.T. ashtrays, also produced locally, were given to the ladies. Class Prexy Ray St. Laurent responded with a hearty expression of appreciation from the Class. Picture taking in the warm sunshine and a tour of the grounds occupied much of the afternoon.

That evening, everyone was invited to a sumptuous dinner dance on the extensive grounds of the Rodríguez home. A vocal and instrumental combination on the terrace was the lovely background for Graciela's artistic setting of a delightful dinner and the enchantment of lamplit tables on the lawn in perfect weather. Not on the official program, this was the special contribution of Graciela and Helier to their 1921 classmates and Cuban associates. It was the more appreciated because it provided what was probably the best opportunity for all of the visitors to mingle with their local hosts and to establish the firm friendships which we all look forward to renewing in the future. Of particular interest to your Secretary was the opportunity to meet with two presidents of associated International Telephone and Telegraph companies: Antonio Rosado,

Jr., '24 of the Cuban Telephone Company and Walter D. Siddall'25 of the Radio Corporation of Cuba.

Sunday was a free day until dinner. We had an opportunity to attend services in a huge new church. The Siddalls were luncheon hosts to the St. Laurent, Rodríguez, Miller, and Clarke couples at a quaint thatched hut country restaurant some 25 miles from Havana. The tasty native food, lovely grounds with many tropical plants and trees, and a congenial group made the afternoon all too short. Bob Miller found this an excellent time to continue his pictorial record of the Class, for which he made color slides of every couple that visited Cuba.

That evening's dinner dance took place at the exclusive Havana Yacht Club. Again there was unusually tempting food in an elaborate club ideally situated on the Gulf amidst formal gardens and beaches on this warm, summery night. A fine orchestra and numerous accomplished vocalists, including Augustin W. Reyes'48, did wonders with American and Cuban music. Where else could you dance to "Take Me Back to Tech" as a cha-cha? In the evening's ceremonies, President Laredo welcomed the 1921 group and a number of additional guests. Introduced were Ray St. Laurent and your Secretary; Prescott H. Littlefield, President of the Class of 1924; Gonzalo C. Docal'44, retiring President of the local Club, and the new officers: Vice-president John E. Chibás'31, Secretary Narciso S. Padilla'52, Treasurer Alberto O. Villamil'42, and Review Secretary Antonio H. Rodríguez'21. To each of the visiting dignitaries went bottles of Bacardí and orchids for their ladies.

President St. Laurent expressed the hearty thanks of all for the enormously enjoyable program and the kindness of everyone. It was regretted that Vice-president Lobby Lobdell'17 and Secretary-Treasurer Don Severance'38 of the Alumni Association could not be present and that Chairman Ted Steffian of the Havana Reunion Committee had been prevented at the last moment from making the trip. On behalf of the Class of 1921, Ray presented to President Laredo an illuminated scroll with a message of thanks to the M.I.T. Club of Cuba. The scroll was signed by all of the 1921 contingent and their wives. Your Secretary moved and it was accepted by acclamation that all present be elected charter members of a new organization to be known as the "Honorary Members of the Class of 1921." A second motion, similarly acclaimed, was that Gonzalo Docal'44 be named President of this group as the one most qualified to hold the office, since he was born in 1921! It was our greatest pleasure and privilege to present to Graciela and Helier Rodríguez an engraved silver bowl as a memento of the occasion and a token of the high esteem in which they are held by their many friends in the Class.

Monday, a Cuban national holiday, was another day to dream about. A procession of private cars left the Hotel Nacional early for a 90-mile drive to the beach of the Hotel Kawama Club on the Atlantic Ocean to the east at Varadero. Midway, the parade halted for refresh-

ments at the comfortable large home of Maria Luz and Tony Villamil'38, General Superintendent of the modern Central San Antonio, and for a tour of the sugar mill, which swallows a carload of cane in just about as long as it takes to say it. The striking setting of the mill in the midst of lovely rolling Cuban countryside was one of the most photographed areas of the trip.

Next the palm studded Yumuri Valley; the mountain formation of the Sleeping Indian and the Papoose; the quaint old cities of Matanzas and Cárdenas; the vivid blue of Matanzas Bay; Cuban beauties at grilled balconies of old tan or pastel colored Spanish homes, affording glimpses through occasional open doors of the lovely patios inside — and then the beach at Varadero with a huge cardinal sign and (almost) gray palm leaf lettering of "Welcome M.I.T. Class of 1921." Note for Harry and Catharine Field; Phil and Edna Coffin say that Varadero equals the Hawaiian beaches. White, powdery sand stretches in a slight curve for some 20 miles facing the Straits of Florida, with crystal clear water, little surf, and almost no stones or shells. Immersed to the shoulders, one can see his feet. From the shore, the water is striated in shades of blue and green. A thatched hut bar, a trio of calypso artists, open cooking on the beach, a long table partly shaded from the intense sun, and the comfort of a modern hotel and lodges (we used a Spanish palace for a bath house!) gave the final official event an extra touch to endear Cuba and our new friends forever. Only the visitors ventured into the water, the natives preferring to wait until it warmed up past the current 76 degrees! On the return, we visited the Du Pont estate, the fabulous Varadero Internacional Hotel, and the growing airport which links with Miami and Havana.

Back in Havana that evening, we visited the famous La Tropicana night club. It is impossible to describe this double stage enclosure with exotic flowers and trees, some growing through the half which is glass-roofed. A runway extending through the foliage and unusual lighting heighten the effect of the lavish stage productions.

Tuesday brought the necessity for our departure from the comfort and elegance of the home which Graciela and Helier spent so many happy hours designing and furnishing. Before leaving, we visited the modern shopping area of Havana and two of Helier's chain of theatres, the *America* and the *Rodi*, the latter for the nickname by which he was known at Tech. Another comfortable air journey took us back to the more prosaic life of the northern climes. A phone call to Ted Steffian in Boston to congratulate him on a good job well done and to tell him how much he was missed revealed that Roy Hersum had also voiced his compliments on the superb red carpet treatment we had been accorded. A long note just received from Bob Miller says the same thing. Later we called Ray in Manchester, Conn., to confirm his safe return and to review the events of the best reunion we have ever had. We want to express our personal indebtedness to Elena and John E. Chibás'31 for their many courtesies

and particularly to Johnny for his considerable help in preparing a complete guest list.

Among those present at the various affairs were the following from the Class of 1921: Maxine and Cac Clarke, Edna and Phil Coffin, Herb DeStaebler, Maida and Chick Dubé, Ethel and Bill Emery, Sarah and Harry Goodman, Alex and Munnie Hawes, Anita and Roy Hersum, Betty and Dug Jackson, Ruth and Irv Jakobson, Helen and Bob Miller, Mary and Phil Nelles, Muriel and George Owens, Graciela and Helier Rodríguez, Rosalie and Ted Rose, Helen and Ray St. Laurent, Anne and George Schnitzler, Madeline and Rufe Shaw, Sylvia and Bill Wald.

Members of the M.I.T. Club of Cuba and guests included: Hortensia and Miguel Amézaga'24; Mary and Ed Ash'22; Gloria and Antonio Badia'43; Hilda and Manuel Cadenas'45; Hilda and Gustavo Calleja'43; Elena and Johnny Chibás'31 and Mrs. Criselda Real; Sara and Gonzalo Docal'44; Salomón Heisler'48; Margarita and Héctor Hoyo'38; Ann and Rafael Laredo'44; Ester and Federico Lindner'49; Peg and Prescott Littlefield'24; José Marques'49; Guillermina and Narciso Padilla'52 and Mr. Martinez; Jean and Grover C. Paulsen, Jr.'40; Silvia and Alfredo Pedraza'41; Chic and Bill Potts'43; Ana Maria and Agustín Reyes'48; Mr. and Mrs. David Rock'44; Graciela and Helier Rodríguez'21 and her four sisters, Rita, Margarita, Panchita, and Ofelia; Margarita and Antonio Rosado'24; Antonio Rosado, Jr.'24; Mr. and Mrs. Walter D. Siddall'25; Ofelia and Alberto Villamil'42; Maria Luz and Tony Villamil'38; Tita and Gaspar Vizoso'31.

Join the M.I.T. Club of Cuba! They're a swell bunch and we'll forever sing their praise! Meanwhile, come join the next Class gathering at Alumni Day on campus in Cambridge, June 16, and hear Arthur Fiedler bring the Pops to Kresge Auditorium for the second successive year. We'll try to show all the Cuba reunion slides if you'll send any you took to your Secretaries right now. — CAROLE A. CLARKE, Secretary, Components Division, International Telephone and Telegraph Corporation, 100 Kingsland Road, Clifton, N. J. EDWIN T. STEFFIAN, Assistant Secretary, 11 Beacon Street, Boston 8, Mass.

1922

After my Trial by Fire plea written for the April issue of Technology Review I went to Boston, there to be tried by snow for three days, the beautiful fluffy stuff stopping all planes and trains. While at M.I.T. visiting with Lobdell, Severance, Kane, Conrad, and others, I found out about Alumni Day, 1958. It's on Monday, June 16. Various members of the Class generally get together during the day's activities and especially at the luncheon. Since the program will be on campus, we will assemble as a group near the auditorium before dinner. Program details are in The Review. Thanks to Warren Ferguson, Parke Appel, and others for their letters.

Apology to Fred Blackall for noting a change of address whereas he hasn't changed at all but is still at the Taft-

Peirce Manufacturing Company, Woonsocket, R. I. He has been since 1933, and still is, president and treasurer of Taft-Peirce. Fred has just completed his fourth and final term as director of the Federal Reserve Bank of Boston and has just been elected as director and member of the executive committee of Textron, Inc. On March 6 he was elected as director of the New York, New Haven, and Hartford Railroad Company. His two weeks' trip to Bermuda in March allows him to return with more than usual vigor to his continued multiple responsibilities. Chester Greening, 202 Glenwood Avenue, Leonia, N. J., is convalescing nicely from a couple of long-named hospital readjustments and operational losses. Chet is celebrating his 30th year with Alcoa's Edgewater, N. J., Works. His son Tom and Jewel his wife will receive a Ph.D. in clinical psychology and a master's degree in social service respectively at the University of Michigan this year. He joins with Ford Blanchard and Al Bowers in regrets regarding missing the reunion last June, but they promise to be with us at the 40th in 1962. Chet invites all '22 men to drop in this summer for a "Stein on the Table" at his summer place on Gibson Road in Orleans on the Cape.

Your Secretary, on an all expense (personal) trip to New York, saw George Dandrow looking as fine as ever meeting with a group at the M.I.T. Club in the Biltmore on Educational Council activities. He was receiving special inspiration from D. Hugh Darden, new executive secretary. Also called on Clate Grover at his president's office of the Whitehead Metal Products Company to thank him for sending items and clippings frequently used in these notes. Also called on Bill Mueser, senior partner of Moran, Proctor, Mueser, and Rutledge, 415 Madison Avenue, New York 17, N. Y. His new offices are extensive and complete; and his exceptionally well done brochure describes large and varied designs they have completed for foundations, marine and heavy construction, site selections, and structural and soils engineering.

Robert H. Brown of Leominster, Mass., called regarding a brainstorming meeting at Worcester M.I.T. Alumni Club. He will receive folders and data from the Creative Education Foundation and perhaps a visit from its treasurer at their meeting on April 10. A note received stated that Theodore Riegel is positively with the Riegel Textile Corp. Yard Chittick has sent a clipping from the *Washington Post* announcing the death of Robert K. Thulman of a heart attack in February. Bob was regarded internationally as an authority on heat design, was a consultant on fuel rationing for the U. S. during World War II, and served as an advisor to the British Ministry of Fuel and Power for several years after World War II. From 1949-1954 he was a research engineer with the Housing and Home Finance Agency. He has been president of Chimney Sales Corp., marketing agency for prefabricated chimneys and fireplaces, which he invented and developed. He wrote many articles for technical heat design journals and served as honorary secretary of M.I.T. for 20 years. Our sympathy goes to his wife and family. Thanks

to Ray C. Burrus and William K. MacMahon for their help in reporting.

The Alumni Fund have forwarded the following changes of address: Allen R. Diefendorf, Jr., 1060 Northeast 91st Street, Miami, Fla.; Charles Starbuck, Jr., 309 South 12th Street, Philadelphia, Pa.; G. Everett Farmer, 608 Texas Avenue, Signal Mountain, Tenn.; Francis G. Davidson, Room 301-2, Second National Bank Building, P. O. Box 643, Titusville, Pa.; Colonel Olaf P. Winningstad, 512 Cedarberry Lane, San Rafael, Calif.; Commander Kenneth Bernard, 1807 Key Boulevard, Arlington 1, Va.; Frank D. Gage, 125 East 39th Street, Brooklyn 3, N. Y.; Charles C. Fulton, U. S. Food and Drug Administration, Division of Microbiology, Washington 25, D. C. — WHITWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo, N. Y. C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.

1923

THE PINES, COTUIT, MASS., will have the red carpet out to welcome us for our 35TH REUNION, starting June 12. Special features are being planned for Alumni Day, June 16. Many members are planning to bring their wives, and five delightful days are assured. It is not too late to make your reservations if you do so promptly.

The Worcester, Mass., *Telegram* and other papers carried the announcement on February 8 that Walter F. Munford, II, has been named executive vice-president of Engineering and Research for the U. S. Steel Corporation. He was formerly assistant executive vice-president at the American Steel and Wire Division in Worcester.

Ernesto B. Ledesma's son, Jose, from Manila, is due here in White Plains this month to start his training in the mutual fire insurance business. Ernesto, 2d, writes that he will not be able to come to the reunion this year but hopes to see us about three years hence.

February was a tough month for our classmates. Harold Bugbee, *Secretary* of the Class of '20, wrote about the passing of Leslie B. Sanders, Jr., XV, on February 23. Les had been seriously ill for over two years. He was assistant sales manager of the Champion Lamp Works in Lynn, and he had a host of friends there and in Marblehead. He is survived by his wife and two daughters. The Alumni Register Office notified us of the passing of Malcolm Johnson, V, on February 27. No other information is presently available. The April notes reported the passing of Benjamin Albert, VI, on February 2.

John E. Burchard, IV, Dean of the School of Humanities and Social Studies, participated in a panel discussion in Kresge Auditorium — the subject, "M.I.T.: A Professional School?" On April 23, Daggett Norwood, VI-A, of the General Electric Company at Hanford, Wash., participated in the 1958 Industrial Health Conference at Atlantic City.

The 35th Reunion at The Pines, Cotuit, Mass., June 12 to 16, will be outstanding. For every member and every guest, the entertainment committee has planned something, including just plain loafing.

For the anti-loafers, there are golf, tennis, swimming, cards, sightseeing, badminton and story-telling. Boats will be available for the Ex-Navy men. Planes can be rented at the Hyannis Airport. Remember, the money you spend on this trip you will not have to worry about spending elsewhere. Where could you buy a better investment in happiness? — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N. Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

1924

During our 34 years as Alumni of M.I.T., the Class of 1924 has had just three secretaries. Only Frank Barrett and Hal Donovan, therefore, share with the present incumbent the knowledge of just how these notes are prepared each month. It's really no secret. Maybe you'd like to know.

First of all, there's a folder in the bottom drawer. In it are carbons of notes of the previous few months. They're needed for reference to avoid repetition. There is also a carbon of a July 30, 1957, letter from George Knight to Mr. Donald Church, Manager, Oyster Harbors Club. It says, in brief: "The Class of 1924 reunion would involve the period Friday, June 12, to Sunday, June 14, 1959. Our estimate is still approximately 125 persons, including wives. . . . Will you kindly hold this period for the M.I.T. Class of 1924 reunion?" There's a note penned across the top, "Repeat every so often so they won't forget."

A Jumbo Post Card from the Fabulous Fontainebleau Hotel at Miami Beach arrives in the day's mail. "Greetings to all our M.I.T. friends from the land of sun and palm-lined boulevards." There's more from Marianne and John Henninger, including "See you all in June." In the folder it goes.

Two days later comes another even bigger card with a full-color aerial of Waikiki Beach and Diamond Head. This one's a Nu-Nui natural color card. "Say New New-y — It's Hawaiian for 'Very Big.'" The message uses very little of the available space. It says: "Had four months' vacation (with pay). Now off again. Si." That, of course, is Chief Engineer Simonds, no doubt starting his 16th round-the-world trip. Into the folder.

Shortly thereafter, one of your Secretary's confreres comes in the door, just up from New York. He digs a crumpled piece of paper from his pocket. "Nate Schooler's son, Jerry '56, handed me this. It's the bunch at your last class luncheon at the New York Club. Says he hopes you'll run it in your notes. Good for future attendance." The list includes Messrs. Bagby, Cooley, Delehanty, Kurzman, Lasiter, Schooler, Greg Shea, Stevens, Tanck, Van Dusen, and Maynard. A distinguished gathering. In it goes.

Then comes a collection of Change of Address slips from the Alumni Register. Most are local changes, men who have moved only a short distance. One, however, shows that Dr. Edward A. Saibel, old address, Pittsburgh, Pa., can now be reached at Rensselaer Polytechnic Insti-

tute, Troy, N. Y. Another, unfortunately, is marked "Deceased, January 28, 1958." It's Guy C. Rogers. Regrettably this, too, is added to the growing file.

One dull, wintry day a breath of Old California shows up in the person of Bill MacCallum. We discuss the Havana M.I.T. week end, where both of us would like to be at that moment; the unfortunate circumstances of Charlie Phelps's death; the Pittsburgh Regional Conference and the beautiful job Ed Hanley did; and other items that are jotted down and slipped into the folder.

Then comes an envelope from The Review Office with a few typed notes and clippings. Jimmy Doolittle's Forty-third Annual Report of the National Advisory Committee for Aeronautics, 1957, is available at the Government Printing Office. Illustrations, 80 pages, paper, 75¢. Now at the M.I.T. Engineering Library, "Economic impact study of Massachusetts Route 128" (1957) by Alexander J. Bone '24. There are two obituaries of Guy Rogers. He had been assistant engineer of clearances for the Pennsylvania Railroad. A bachelor, he lived with his sister in Wilmington. From the Phi Gamma Delta magazine comes a note that Robert O. Dehlendorf is sales manager in charge of refrigeration equipment for Delco. He boasts three sons. Then a lengthy article by Colonel Walter C. Thee (retired) from a magazine called the *Insurance Salesman*. Seems Walter is the agency Armed Forces Representative of the Equitable Society in Columbia, S. C. He writes on "Ideas and Methods That Will Make Sales to the Military." We remember the Colonel well. He married a gal who used to be our best contributing artist to Voo Doo's annual Girl's Number. The folder is getting fatter.

Then comes the prize of the month from our worthy president, Pret Littlefield. Seems he was planning on going to that Havana Week End. Didn't say whether he made it or not, but Mike Amezaga had sent him a columnist's rambling from the *Havana Post*. All about Tony Rosado. "There are undoubtedly many advantages to being president of the Cuban Telephone Company, like Antonio Rosado. . . ." Then he goes on for 24 column inches with a tongue-in-cheek complaint about Tony's operators not leaving names and numbers on long distance call-backs. Now I know this is not the immediate concern of President Antonio Rosado — but I'll lay a shade of odds that the international operators in Miami and New York hear all about it. Ah, the power of the press.

Then comes a card from The Review Office, "Class Notes for the May issue will be due in this office on March 17," and almost immediately March 17 is here and you pull out the folder. And you put together all these items, add the fact that you've just had a call from Greg Shea who wants to know where his namesake, Dick Shea, is (Knolls Atomic Laboratory in Schenectady) and why Will Blaisdell's mail is returned (no suggestion). And you discover that your column will still be dwarfed by Obie Denison (1911); Cac Clarke (1921); and George Warren Smith, whose 1926 column is a promotional vehicle for the Rockport-

Cape Ann area. So you throw in a few words about the weather (bad) and the fact that '24 is well ahead of last year in the Alumni Fund at the moment (good), and offer a fervent prayer that next month all the people who wonder why you don't have more news month after month will do something more about it than just wonder. The folder is thin again and needs fattening. — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

Of primary importance this month is that Alumni Day is Monday, June 16. You are already aware of this fact, but this is to urge that you make your reservations early. All activities will be on the campus, and the Boston Pops Orchestra will be transferred to the Kresge Auditorium for that evening. If you did not have the chance to enjoy them at Alumni Day last year, you missed a great deal. Don't pass up this opportunity!

A few news items during the past month will certainly be of interest to all of you. The Fore River Notes, which appear periodically in the *Quincy Patriot Ledger*, indicate that Warner Lumbard, Course XIII, former hull draftsman with Fore River Ship Building, and presently vice-president in New York of the Simmons-Boardman Company, publisher of the monthly *Marine Engineering and Log*, made the following comment: "Many thanks for mention of us in the February 18 issue of the *Patriot Ledger*. This is the first time we ever had a boost for trying to do a research job. All here at *Marine Engineering and Log* are pleased that you were advising the people at Fore River that we try to publish stories on Fore River-built ships as often as possible."

The Cleveland, Ohio, press introduced one of their recent articles with the following words: "Seldom a day goes by that the phone in the office of the chief engineer of Mueller Electric Company doesn't ring to set off plans for expansion of a children's home or raising money for a hospital. The community's health and welfare needs — these are day-to-day matters for Edward H. de Coningh, who today was elected president of the Welfare Federation for a third year." Ed is certainly to be congratulated on the fine job he has been doing over the past years with the Welfare Federation Board. This board is the planning board which guides the workings of some 200 public and private health and welfare agencies in Cleveland. The article indicated that Ed still finds time from his engineering welfare duties to get away for an annual ski trip.

A very fine article appeared in the *New York Times* under the heading of "News of Motor Car Sports Activities." The number one man in this article was Alec Ulmann, Course IX-B. It is impossible to improve on the article as presented in the *Times*, so it is quoted verbatim as follows: "The eighth annual international Grand Prix of Sebring, Fla., is scheduled for Saturday, March 22. This is America's contribution to the world championship for sports cars. It is, therefore, the outstanding race on a list of hundreds to be

run in the United States in 1958. It has been the only race in America, thus far, to attract the world's leading drivers.

"The man behind the Sebring race is Alec Ulmann. The son of a Russian college professor, Ulmann was born in that country. He fled to Switzerland with his parents in 1917, was educated there and at the Massachusetts Institute of Technology. (He came to the United States in 1919.)

"After M.I.T., he worked for the Good-year Tire and Rubber Company in its export division, handling tire and airplane product sales around the world. In 1935, he started his own export business in aircraft equipment. He had been interested in racing automobiles since his early youth, and was one of the organizers of the Sports Car Club of America. In 1949 and 1950, he organized road races at West Palm Beach, Fla.

"Then he discovered that the Sebring Air Terminal, a base for World War II bombers, was to be deactivated. It was a 'natural' for a sports car race. With the approval from the Federation Internationale d'Automobile, the world governing body for racing and tests, he put on the first Sebring 12-hour race in 1952. His first race there, a six-hour event, was run under S.C.C.A. auspices in 1950.

"The 12-hour race has grown in stature over the years and it now is a 'must' for all the great European manufacturers and drivers." — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

This issue of class notes was scheduled to have been written from Mexico, for today is the opening event of the fiesta of the M.I.T. Club of Mexico City. Instead, the issue is being written from my bedroom. Last week I felt the symptoms of a cold with a temperature which kept rising and rising. When after several days the temperature finally broke, a brilliant red-spotted rash covered my entire body — yes, I had the measles. Measles is a poor substitute for a vacation trip to Mexico, but I shudder when I think it might have been both — i.e., the measles could have arrived *after* we got to Mexico. So we still have the fiesta to look forward to next year, and we do hope some of you will plan to join us then. Start thinking about it!

There is something else you must also start thinking about and that is Alumni Day, which has been scheduled for June 16 on campus. An event is to be repeated again which was one of the finest things I have ever witnessed or expect to witness: Arthur Fielder will present the Boston Pops in the Kresge Auditorium. I truly cannot find words to tell you how wonderful this concert is. You all know Fiedler and the Boston Pops, of course. However, in the Kresge Auditorium where every seat is a front seat and where acoustics are perfect, this becomes your own private concert. There just is nothing like it. It was a sellout last year and will be again this year, but I don't want any members of the Class of '26 to miss out on such a fine concert.

This is going to be the extent of the May notes. My references are all at Pigeon

Cove, and we will have to miss going there this week end. I'll have much to write about in the next issue. I did have a visitor from the Class the other day. My office tells me that during my illness Bill Latham dropped by to see me. Sorry I was not there, Bill — please try it again. — GEORGE WARREN SMITH, *General Secretary*, c/o E. I. du Pont de Nemours and Company, Inc., 140 Federal Street, Boston 10, Mass.

1927

A very recent postcard from Major General Fritz Glantzberg tells us: "Military Air Transport Service headquarters has moved from Andrews Air Force Base outside Washington to Scott, and we have moved with it. No change in job. Ran into Sid Berman at Travis Air Force Base investigating the loss of one of our C-97's."

The *M.I.T. Observer* in its January issue reports that the American Meteorological Society gave its "Award for Outstanding Services to the Society" to Professor Henry Houghton.

The board of managers of the Methodist Hospital of Brooklyn at its annual meeting elected C. Wesley Meytrott to the board of managers. He has also been elected president of the Brooklyn Rotary Club. Robert R. Brown presented a paper entitled "A Generalized Computer Procedure for the Design of Optimum Systems" at the February meeting of the American Institute of Electrical Engineers at the Hotel Sheraton-McAlpin in New York.

Alumni Day is Monday, June 16, 1958. All on campus once again with Boston Pops in Kresge in the evening.

William G. Payne is a wholesale distributor of upholstery and drapery materials in Dayton, Ohio. He has just returned from a five-week trip to Italy and Belgium locating new fabrics for this season. Robert A. Engel is the proud father of two children — a son and a daughter. David is a graduate of St. Lawrence University and New York University Law School. He is now in the Attorney General's office in Concord, N. H. Judy married Charles T. Hunter, Junior Grade, U. S. Navy, Dartmouth '55. They are stationed in Honolulu until June of 1958.

Harland P. Sisk was elected president of the Family and Children Service of Berkshire County at the annual meeting. The new president is manager of manufacturing for the distribution transformer department of General Electric. — J. S. HARRIS, *Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

1928

As you read these notes our reunion week-end party at the Marshall House, York Harbor, Maine, will be only a month away. Inspired by the success of the wonderful get-together we had at our 25th, your committee has worked hard to ensure that the 30th also will be an outstanding event in the history of M.I.T. 1928. Don't miss it! If you have not signed up at this late date, please do so at once. Don't be one of the regretful! Make up your mind

that you *will* be there and send in your registration now to Jim Donovan, Artisan Metal Products, Inc., 73 Pond Street, Waltham, Mass.

Bob Proctor, who has never missed a reunion, says he will make every effort to be at this one even though it requires a trip from Springfield, Ohio.

We are happy to report that Charlie Richheimer, who thought earlier he could not join us, has had a change of plans that will now permit him and his wife, Helen, to be on hand for the big affair.

'28 men continue to make headline news. This time it is John Barnes, VI-A, who was the subject of an Associated Press item, "Scientist Sets Space Timetable." Our copy appeared in a Boston paper early in March. The story informs us that, in addition to teaching engineering at the University of California at Los Angeles, John is head of a firm of consultants, Systems Corp. of America, specializing solely in space travel. His predictions are that: small rockets with instruments will circle the moon in 1958; an instrumented vehicle will go to Mars and Venus in 1964; a manned satellite will safely orbit the earth in 1966; man will make a safe trip to the moon and back in 1967; man will land on the moon and return in 1971; and that man will voyage to Venus and Mars and back in 1975! John, this is a fascinating field and we will definitely expect to be hearing more about you and your activities in the years ahead!

The following item appeared in *Paper Mill News*, January 20, 1958: "Bauer Brothers Co., Springfield, Ohio, has appointed Robert J. Proctor as administrative assistant to the director of engineering. . . (He) joined the company recently. . . Mr. Proctor, before joining the Bauer Brothers Co., was assistant to the president of the Eaton-Dikeman Co., Mount Holly Springs, Pa. Prior to that he was general manager at West Jersey Paper Manufacturing Co., Camden, N. J." Our best wishes, Bob, for your success in this new assignment.

Grant Flynn wrote to Jim Donovan: "The reunion sounds like a real fine idea — it's at a great spot and should be a lot of fun — can't make it though! It doesn't seem possible that 30 years have gone by! I never expected in 1928 to be one of those *real old grads*! My best regards to the gang and best wishes for a most successful reunion!"

We regret to report the death of three classmates: James L. Pontz, Course XV, Lititz, Pa., died July 20, 1957. Radu I. Hurmuzescu, Course VI, Mexico, was killed in an automobile accident, January 31, 1958. Thomas E. Guerin, Course IX-B, Moorestown, N. J., died February 13, 1958. — GEORGE I. CHATFIELD, *Secretary*, 100 East 42d Street, New York 17, N. Y. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, Cambridge, Mass.

1929

We are happy to say that Frank Mead has agreed to chairman the 30th reunion coming up in June next year. I am sure he will welcome any suggestions from you boys as to location and program. Write to Francis M. Mead at New England

Telephone and Telegraph Co., 125 Milk Street, Boston.

As many of you know, John Wilson has been nominated for president of the Alumni Association for the ensuing year. You will probably have received your ballot by the time these notes are published. Congratulations to John, a good man for the job.

We had a note from Mace Smith in Birmingham, where he is with Chicago Bridge and Iron Company. Mace reports having seen Ed Ware a couple of times in the recent past. He also reports that Larry Luey is in Birmingham with the Southern Natural Gas Company. It was good to hear from Mace.

Notes from the press advise that Wade Shorter has been elected vice-president of his company, Emhart Manufacturing, in Milford, Conn. Wade has been with Emhart since the war, joining them in 1947 as manager of Development; he has most recently been general manager of Research, Development, and Engineering.

Also from the press John Lucey, who has been city engineer in Schenectady, has been appointed assistant superintendent of Engineering and Research for the state of New York Public Works Department.

Wally Gale is back from his European trip; and in talking with him, I learned that he is expecting a full year of traveling for the Institute. Wally sounded in good fettle and is raring to go for the 30th reunion.

We understand that Hunter Rouse delivered a paper before the American Meteorological Society in January in New York. We haven't seen Hunter since the 25th reunion.

Please keep the notes coming in, as they are our only source of Review Notes. — FISHER HILLS, *Assistant Secretary*, Dewey and Almy Chemical Co., 62 Whittemore Avenue, Cambridge, Mass.

1930

We received a status report from Reg Bisson. His son, William J., is now a sophomore here at M.I.T. and his daughter, Betsy, is in her third year at Laconia High School. His two other sons, Robert A. and John F., are in grade school. Businesswise, he is building a \$300,000 blast-resistant reinforced concrete dial exchange building for the New England Telephone and Telegraph Company in Laconia, N. H., and is completing extensive additions and alterations at the Laconia National Bank. Reg is coauthor of a brief article in the January-February issue of *The Military Engineer* on "Precast Concrete Buildings in the Middle East in 1942." He is the outgoing secretary of the Association of General Contractors of New Hampshire and Vermont, and is the sole proprietor and engineer of W. M. Bisson and Son of Laconia, N. H.

Some very interesting information came to our attention through a *Palm Beach Post-Times* newsclip about our classmate, Elverton Clark. It seems that Elverton is one of those rare birds who retired early to his hobbies. He was 36 when he decided to chuck his engineering career because it became clear to him that

his real interests were in his hobbies, fishing and woodworking. With the full co-operation of his wife he bid his boss goodbye and moved his family to Lake Placid, where he had previously spent many vacations and which he had years before decided would be his retirement home. He set up a small sports shop stocked with fishing gear, made a boat, bought an outboard motor, and set himself up as a fishing guide. He also served notice on the town that he was available to do expert cabinet work when he could fit it into his busy schedule. When this all happened 12 years ago, there were people who thought he was off his rocker — that he wasn't very bright to give up a solid engineering career for a life which seemed to be indefinite. But Elverton has had no regrets — he is making a good living for his family and at the same time he is doing exactly what he wants. The article goes on to say that as a guide he gets to know many important and interesting people, such as former Defense Secretary Charles Wilson, who was a recent client of his on a fishing expedition. His advice to other people who want to retire early is that they just make sure they have something specific to retire to — something they enjoy better than their work — substantial hobbies they are sure they can earn a living at. In such cases, he thinks a person would be smart to retire; and the earlier the better.

Henrietta Dane dropped us a note recently. She said she had no professional news, since she has been only a housewife and chauffeur since her job in the drafting room of the Torpedo Station in Newport during the war. As "patron" of architecture, though, Nat Saltonstall '32 has designed and built for the Danes a home in Manchester and is presently doing a rather large addition for them in Belmont, Mass., where Henrietta resides with her family. She says the children are growing up — four married and one grandchild expected. Her 12-year-old daughter devotes all her time (and her parents', too) to figure skating and is currently New England Juvenile Champion.

Jules Larrivee is now employed as a mathematician at Lockheed Aircraft Corporation and is presently living in Sunland, Calif. He is coauthor of the book *Mathematics and Computers* published by McGraw-Hill in 1957. Lauri A. Lindell has been working as an architect with Rust Engineering Company in Waltham, Mass., since July, 1956. In January, 1958, Ormond Lissak moved to Los Altos, Calif., and is now working for Kaiser Engineers in Oakland. He hasn't seen any classmates lately but thinks perhaps he'll find some in California.

We were glad to hear from Bill Paine. He says it's been a great many years since he made a contribution to the class notes of 1930. Bill joined Bendix Aviation at South Bend in 1931, serving as laboratory engineer and later as chief engineer in the development of vacuum power brakes, automatic clutch controls, and other vacuum devices. He directed Bendix' production of aircraft armament at South Bend from 1941 to 1943 — then went to Owosso, Mich., as general manager of a wartime division. After World War II he served on the staff of the presi-

dent of Bendix and as general manager of the Skinner Purifiers Division, Detroit. In 1948 he became general manager of the Kansas City Division, which operates a \$50 million plant devoted exclusively to the manufacture of complex equipment for the weapons program of the Atomic Energy Commission. In December, 1957, Bill was elevated to the presidency of Bendix Westinghouse Automotive Air Brake Company and also named chief executive officer. Congratulations, Bill, and good luck.

It is with deep regret that I inform you of the death of our classmate Joe Anastasi, who passed away December 29, 1957, following a heart attack. We extend our deepest sympathy to his widow and family. Mrs. Anastasi wrote me that her husband was eagerly looking forward to sending their son, James, to M.I.T. within a few years; and she is going to try to fulfill Joe's wishes and hopes that James continues to show his ambition to follow his father's profession.

We have received the following changes of address: Nathaniel Clapp, Metcalf and Eddy, 1300 Statler Building, Boston 16, Mass.; Mrs. Edward Everett, 67 Rockledge Road, Hartsdale, N. Y.; Frank C. Fahnestock, Sycamore Lodge, Roslyn, N. Y.; David W. Gurton, 1275 South Bayshore Drive, Miami, Fla.; George M. Houston, Jr., 3145 Cockrell Street, Fort Worth 9, Texas; Dr. David D. Jacobus, 101 Chestnut Street, Boston 8, Mass.; Sven G. Lawson, Canterbury Hill, Topsfield, Mass.; Ormond M. Lisak, 10795 Loyola Drive, Los Altos, Calif.; William P. MacKusick, 764 Crestview Avenue, Akron 20, Ohio; Willard B. Paine, 11820 Edgewater Drive, Lakewood 7, Ohio; Norman F. O'Shea, 307 Corder Street, Lees Summit, Mo.; Dr. E. Lionel Pavlo, 642 Fifth Avenue, New York 19, N. Y.; Robert T. Sauerwein, 6 Westmont, West Hartford, Conn.; Brigadier General John C. Steele, Headquarters, 56th A.A.A. Brigade, Fort Devens, Mass.; Dr. Thomas E. Warren, Saskatchewan Research Council, University of Saskatchewan, Saskatoon, Saskatchewan, Canada; Jarvis M. Wilson, 32 Willow Lane, Albany 11, N. Y. — GEORGE P. WADSWORTH, *Secretary*, Room 2-285, Department of Mathematics, M.I.T., Cambridge 39, Mass. RALPH W. PETERS, *Assistant Secretary*, 249 Hollywood Avenue, Rochester 18, N. Y.

1931

Let's not forget Alumni Day — Monday, June 16, 1958. All on campus once again with Boston Pops in Kresge in the evening. Details will be found elsewhere in The Review.

A note from Mrs. Alice O. Andreani brought us the sad news of the death of her son, Roberto, on January 15. Her note was written on our Class Book Order Form, which Roberto had filled out and to which he had attached American bills. In our reply, we asked if she wouldn't please accept a complimentary copy of the Class Book and let us return the money. We are quoting her answer, as we know you will all be interested in it: "So many thanks for your kind letter of sympathy. It has truly been a great shock

to us and we cannot believe it yet. I don't know whether you knew that when Rob was at M.I.T. he joined the aeroclub and was sent up in a glider and crashed and broke his back. No radiographs were taken of him at the time. . . . He started commercial flying, and then had to come back to Italy as he was in the United States under the student quota. He never told us about his crash and asked us to manage a place in the quota here, as he wanted to go back and become an American citizen. We got the place, but when he returned he was in such a state that we hurried him off to the hospital where radiographs proved that he had two vertebrae cracked and decalcified. He was in the hospital two years in Venice and in a plaster cast. Then he refused to wear the cast any longer and slowly, during the years, became ever more stooped. His spine had become rigid so that he couldn't lean over. However, he led a most happy life and an active one.

"When we moved to Rome he took a place in the Italian Radio Broadcasting Company (then the E.I.A.), where he announced the first short-wave program with Guglielmo Marconi and was the American Hour from 1934 until 1940, when he volunteered in Aviation (technical listening post in Sicily) until the armistice — he happened to be in Rome for a military check at the time. After the war was over he started again at the Radio (now called R.A.I.) until the first of December, when he had the Asiatic flu and bronchial pneumonia. His passion was always flying, and when we first came to Rome he joined the aeroclub here and flew (broken back or no!) every day. When he was refused a license he was brokenhearted and started building model planes, teaching a whole group of young fellows. He could never run and launch his own planes, but one of his boys always did it for him; and they won cups at most of the meets. Just the week before New Year's one of the boys took Rob's latest plane to Palermo and won the silver cup for him. He was so happy over it — he was convalescing at the time — and we drank one another's health out of it on New Year's Eve! Then he went out too soon — to try out another plane — and had the relapse.

"All the aeromodellist magazines in Italy have articles on his passing, some with pictures of him. Apparently he was considered an important person in that field. He was the quietest, most retiring person, with no ideas of grandeur; so I am sure that he was astounded, as we were, at the demonstration of love which was shown him at his funeral. The American Church, St. Pauls, was packed; and crowds lined the street as a last sign of affection. I think the whole Aeroclub, the Aeromodellisti Club, The Presidenza del Consiglio dei Ministri, the R.A.I., the Notturmo, the Vestry, the Auxiliary of the Church, American Embassy, and the scores of American and Italian friends were present. . . . One of the boys of his 'stable,' as they call the group, is going to continue flying his planes as long as they last — has taken his number and seal, R.O.A. It is so kind of you to offer to send the yearbook and the money back to me. I shall put flowers on his grave

from M.I.T. Class of '31 with it. He never married and always lived with us. The house seems empty, as it was always filled with his 'pupils' and fishermen friends and the radio lot."

From *Iota Muse*, Phi Gamma Delta periodical of December, 1957, we learn that one of Harold Alcaide's sons has followed his father into the business of manufacturing flavoring syrups. The Alcaides have another son at Cornell, a daughter in Mt. Holyoke, and a daughter who is a junior in high school. They live in Weston, Mass.

An interesting letter from Lorenzo Manzanilla mentions that he knows my old roommate, Emilio MacKinney (Class of 1930) very well and sees him occasionally. He is living in Mexico City. Lorenzo lives in Merida, Yucatan, and we were very much interested in what he has to say about it: "The population of Merida has increased very little, if you take into consideration that Merida was founded in the year 1535. In this century Merida has grown from about 60,000 to about 160,000. We have very serious economical problems, which mean that many people emigrate to other parts of Mexico. I believe the population of Merida will keep on slowly growing at the expense of the country. We expect that the road that will connect Merida to Mexico City will be finished at the end of this year, although I doubt that the bridges will be built in less than two years more. When this road is paved they will have to inaugurate the ferry connection to Cape San Antonio in Cuba, which is, I believe, some 200 miles; I know Cuba has already made its part of the road. We have a road to Puerto Juárez, on the Caribbean Sea, which will be the Mexican Port for the ferry boats. I think the Cuban Port is called 'La Fe.' This road is only about three-fourths paved, but we believe will be completed this year or next. When all the roads are ready, we think the ferries will start plying."

O. Mason Burrows, 13 Highland Avenue, Holden, Mass., has been made supervisor of process engineering at the Refractories Plant of the Norton Company, Worcester, Mass.

An interesting article in *Boston Business*, entitled "Jet Spray Pioneered Beverage Dispenser," tells how Bill Jacobs developed his Jet Spray cooler. A Norge water cooler was his inspiration seven years ago, when it occurred to him that some kind of ice-cold flavored or fruit drink could pour into the cup as well as water. "Before long he had transformed the old Norge water cooler into an electrically-refrigerated non-carbonated drink dispenser. He purchased units as he reworked his invention and sold them. Being an imaginative man, he coined phrases like Jet Action, Constant Whirl, to describe the new machine, and put the picture of a cold aerated drink in people's minds. . . . The Jet Spray cooler is used all over the world, in Canada, Sweden, Germany, Italy, South Africa, and Samoa; as a matter of fact the United States Army base in Greenland requested a few Jet Sprays. Jet travels the high seas, too, on the S. S. *Matsonia*, which carries six machines to accommodate passengers. Today William Jacobs' Company Jet Spray is the

largest manufacturer of noncarbonated drink dispensers in the world."

According to a news clipping we have just received, Charles W. Rankin, who is a physicist in the State Police Laboratory in Albany, spent his month's vacation last fall on a busman's holiday trip around the world. He planned to study identification methods used by police in most of the 10 countries he would visit, concentrating on spectographic analysis, a method of identification by colors in which he specializes. When asked why he didn't spend his vacation vacationing, he replied: "I love travel and this will be as much fun for me as lolling on a beach." Charlie is a "ham" radio operator, Ke ELH—and hoped to meet some of the friends he had made on the radio.

The following address changes are reported: Raymond Donway, 257 Shrewsbury Street, Holden, Mass.; Brigadier General Robert J. Fleming, Jr., A.D.S.E.C., A.P.O. 122, New York, N. Y.; Lieutenant Colonel Harry D. Kamy, Tc. Supply Section, U.S.A. General Depot, A.P.O. 343, San Francisco, Calif.; Alexander G. MacKenzie, East Rim Nickel Mines, Sudbury, Ontario, Canada; David Nicoll, 2075 Sea View, Post Office Box 817, Del Mar, Calif.; Julien F. Phillips, American Potash and Chemical Corp., 3030 West Sixth Street, Los Angeles 54, Calif.; H. Sheldon Smith, Sears Roebuck and Co., 275 Monroe Avenue, Rochester, N. Y. — EDWIN S. WORDEN, *Secretary*, 9 Murvon Court, Westport, Conn. GORDON A. SPEEDIE, *Assistant Secretary*, 90 Fal-mouth Road, Arlington 74, Mass.

1933

Where were you 45 years ago? This is no typographical error, son—I did say 45; but before you (a) try to put together an intelligent reply or (b) tell me to move back into my own carriage, let me jump ahead quickly another 20 years to 1933 and observe that a whale of a lot happened in your life between 1913 and 1933. The same observation is doubtless valid for the last 25 years. Yes, you guessed it—your Secretary is simply trying to get you in the reflective mood to make sure you will break all other dates to join with the rest of the Class here in Cambridge on June 14 for a three-day holiday and reunion. As this is written, we are sure of a record turnout. But we want to make sure that you, who show regular interest in your classmates through these columns, are among those present on June 14.

A few in the Class obviously want to bring the junior members of the clan in June. Your committee has looked hard at this question; and frankly, the accommodations in Baker House aren't suitable for those below the teenage level. On the other hand, we want you to come; and if you have to bring the kids, we will help you get accommodations off campus—and assist in the baby-sitting department—just so you can be with us.

Speaking of our reunion, may we insert a real plug for additional contributions to our 25 Year Class Gift. As a matter of policy, this column is not the place to make a plea for money; but perhaps we will be pardoned for straying once in 25 years.

Many in the Class have contributed handsomely—several \$2,000 or more. Admittedly, many in the Class are simply not in a position to do as much. But if you can, please do. Any amount is most welcome. If every active member on the rolls would give a hundred dollars, we would be able to present nearly \$100,000 to Tech this June; and this would exceed by a comfortable margin what any previous 25-year Class has done.

Next month's notes will carry news of many in the Class, some taken from notes accompanying the questionnaires that have been coming in for the class record.

The Alumni Association has just announced that the Boston Pops Orchestra will play again this year in Kresge Auditorium on the evening of Alumni Day, June 16. And this, boys and girls, is really something you don't want to miss!—R. M. KIMBALL, *Secretary*, Room 3-234, M.I.T., Cambridge 39, Mass.

1934

You will read elsewhere in this issue about the upcoming Alumni Day program on June 16. Again it will be held on campus with the Boston Pops playing at Kresge Auditorium that evening. A good turnout is likely with '59 only one year off.

Jim Kimberly writes to say he is now self-employed and plans on doing some marine biological research, having acquired his former yacht, *Curlew II*. Jim lives in Chicago and has just completed his second term as president of the Sports Car Club of America. Anyone for signing on as deck hand?

We have previously reported Sam Untermeyer's connection with General Electric's Vallecitos (near San Francisco) Atomic Laboratory. We now have a glowing two-column spread on Sam from a San Francisco paper under the heading "Are Scientists Human?" all in the interests of dispelling the notion that scientists are odd-ball eggheads. Of course the answer for Sam comes out yes. Ed Fleming recently came to the Fore River shipyard where he went to work after graduation, this time as head of a hull unit for the Navy, in which he serves with the rank of captain.

We must report the death in March, 1950, of George B. Harvey, Jr., of London, England, word of which has just been received from his mother.

A chit from a fraternity alumni bulletin notes that Russ Hastings' son is now a pledge in his father's fraternity, Phi Gamma Delta, at some unspecified college [otherwise known as M.I.T.—Review Office editorial note].

Looking ahead to June, 1959, Mal Stevens has taken on the chairmanship of the 25th reunion committee. With Mal's great interest in class affairs, experience on past reunions, and location at the Institute, he is a natural for this job; and the Class is very fortunate that he has accepted the call. Next month, Mal will be writing this column; so look there for early developments. John Hrones will write notes for the July issue.—*Secretaries*: WALTER MCKAY, Room 33-217, M.I.T. MALCOLM S. STEVENS, Room 1-139, M.I.T., Cambridge 39, Mass. JOHN

A. HRONES, Vice-president for Academic Affairs, Case Institute of Technology, Cleveland 6, Ohio.

1935

Last month I listed all the area chairmen for our 25th year gift to the Institute, "THE CLASS OF 1935 SCHOLARSHIP FUND," and it is the hope of the Committee that all members of the Class will co-operate and make their job as easy as possible. Please remember that all contributions, small or large, will be appreciated and accepted with equal thanks. Joe Conrad reports that our class Special Gifts response, referred to in last month's notes, has increased to 17 as of February 11. This is only one less than the 1957 Fund.

Don Severance has notified me that Alumni Day will be Monday, June 16, 1958; all activities will be on campus with the Boston Pops in Kresge Auditorium in the evening. Mark this date on your calendar and try to make it.

I am planning a letter to all the area chairmen begging, and I mean begging, for some news for the 'Notes.' In case the letter ended up in the circular file, let this be a reminder. I would be very happy to receive a line from one and all. I don't mind spending the time to whack out these notes 'hunt and punch' as long as it does not have to be an original composition, an area in which I have little or no talent.

Alfred Alschuler, Jr., was recently appointed to the board of directors of the bank of Highland Park, Ill. Al is a partner in the architectural firm of Friedman, Alschuler, and Sincere in Chicago. He is active in numerous civic and educational organizations and resides with his wife and four children at 781 Sheridan Road, Highland Park, Ill. Colonel George G. Garton was recently assigned chief of the War Games Division of the Combat Development Sections with headquarters at Fort Monroe, Va. He has been in the Army since 1926 and has been awarded the Silver Star, Purple Heart, Legion of Merit, and Bronze Star Medals. Dr. George E. Valley, Jr., Chief Scientist, U. S. Air Force, recently addressed the third annual Jet Age Conference in Washington, D. C. He spoke on the 'Future of Manned Aircraft.' Henry King tells me that he sees Larry Hall occasionally. Larry is in the insurance business in Manchester, N. H.—FRANCIS W. MULDOWNEY, JR., *Secretary*, 1109 Boylston Street, Chestnut Hill 67, Mass.

1936

If we are to have interesting notes in each issue of The Review, we must have the co-operation of all you guys and gals. Won't you please write me, telling what mischief you have been up to, whom you have seen, and what they are doing? At the 20th reunion several promised to send in material periodically. Some have followed through, but most haven't set the pencil to paper as yet. I haven't had much luck getting the full story on Major Kathleen Shott's recent wedding. Perhaps Alice (Hunter) Kimball could scoop the story for us. How about it, Alice? The address is Sheppard Air Force Base, Texas.

The name change—Major Kathleen S. Cummins. While you are at it, Alice, get a good account of her activities from 1936 to date. Also, it would be an excellent idea if you would check on all the other coeds.

Norm Copeland has been promoted again. Last August he was appointed manager of manufacturing for cellophane and acetate film. Now he has been appointed assistant director of manufacture of the Du Pont Company's Film Department. Norm's latest address is Montchanin P. O. Box 61, Montchanin, Del. Another Norm has also qualified for the promotion department. Norm Robey has been appointed assistant manager of the Whiting, Ind., refinery of Standard Oil Company (Indiana). Norm has been assistant manager of the company's refinery at Casper, Wyo., for the past five and one-half years. Norm's wife, Bernice, and their three children—Shirley, 19; Jerry, 15; and Nancy, 12—will move from Casper to Whiting at the end of the school year.

Our Class was well represented at the Winter General Meeting of the American Institute of Electrical Engineers held at the Sheraton-McAlpin in New York. Oliver Angevine gave a paper entitled "Reliability of Transformers for Electronic Applications," and Walt MacAdam gave a paper entitled "A Basis for Transmission Performance Objectives in a Telephone Communication System." In the article field, Bernard Vonnegut writes on "Simple Electrometer Employing an Electrified, Nonconducting Fiber" in the *Review of Scientific Instruments*, December issue.

Our old friend and treasured correspondent, Cesar Calderon, has moved from Santurce to San Juan, Puerto Rico. How about filling us in on your latest activities, Cesar? Two of our classmates have recently moved into the New York City area; Gerald Chapman is now at 107 Arthur Street, Garden City; and Bob Evans is now with ACF Industries at 30 Church Street, New York City. Henry Furniss' new address is 1269 Spring Street Northwest, Atlanta, Ga. John Hamilton is with Union Carbide Corp., Silicones Division, Box 180, Sistersville, W. Va. California gained one and lost one: Charlie Trescott is now at 848 Rincon Lane, Palos Verdes Estates, Calif.; and Julie Lacey is now located at 408 Bunkers Cove Road, Panama City, Fla. By the way, what ever happened to California Hank?

Bernard Gordon is project engineer and head of the Foundations Engineering Division of Porter, Urquhart, McCreary, and O'Brien of San Francisco. His work includes highways, airfields, and so forth, from the Mississippi River to the Pacific Ocean and from Canada to Mexico. Bern's family consists of a wife and four dogs (hunting pals). Tony Hittl usually sends along some news but recently reported "nothing new." Tony, as you know, is assistant manager for engineering, Linde Co. (division of Union Carbide). Bob Sawyer is currently working with the Mechanical Engineering Division of Priest Rapids Dam. His company has a four-year contract on all piping and mechanical accessories on the project. The Sawyers have three sons.

Charlie Antoni'37 is still teaching at Syracuse University. Ariel Thomas is resident engineer for Metcalf and Eddy on a

\$30 million sewerage treatment plant and outfall job in New Jersey. Ariel has a daughter at Wellesley. Joe Smedile returned from Bolivia in the summer of 1956. Spent some time at Fort Leonard Wood as Chief of Staff Comptroller (responsibility over money and manpower) and then on to command the Fourth Training Regiment Specification, actually a school of 5,000 enlisted men taking eight-weeks training courses of all kinds. Walt Wojtczak'37 is still in the construction business in Connecticut. Walt still plays tennis, mostly doubles, but hasn't succumbed to golf as yet.

When it comes to changes, Bill White-side takes them on two at a time. Rank: captain to rear admiral. Residence: Monterey Park to 6731 Provence Road, San Gabriel, Calif. Al McKittrick made a similar switch but with reverse English. Handle: captain to mister (Alumni Register official entry, "Captain removed"). Home: A.P.O. New York, N. Y., to 208 Stewart Avenue, Ithaca, N. Y. Ledyard Blakeman and El Koontz move so fast we only catch up with them on every second hop. Ledyard went from Birmingham, Mich., to West Simsbury Conn., to his latest location at 95 Wilson Road, Princeton, N. J. El, meanwhile, went from New Jersey to Pittsburgh and on to Chicago. Jack Austin gives El's latest location as 2405 Lincolnwood Drive, Evanston, Ill. Lincoln Orr has moved himself right out of the Alumni Register. His name has been removed from the files due to their inability to locate him. Should anyone know of his whereabouts, tell him to write in and get reinstated.

Walter Lane's new address is 244 Main Street, Hingham, Mass. Russ Bandomer has moved from Sharonville, Ohio, to 7130 Cornell Road, Cincinnati, Ohio. Paul Mulkern has apparently joined the Florida contingency. He is now with Continental Can Co., Tampa, Fla.—no home address given. Al Campbell has headed in the opposite direction, Canada. Al is with Northern Electric Co. Ltd., P. O. Box 6124, Montreal, P. Q., Canada. Leroy Robbins is now located at Route #3, Moss Side Lane, Baton Rouge, La. Andre Brisse's new address is 101 Edgecliff Road, Roslyn Farms, Carnegie, Pa. Whitin Brewer is engaged in the sale of securities. We have two classmates "lost" at the present time. Kwok Chan has left Hong Kong and Fred Martino has departed from San Diego. This much we know—but does anyone know their new locations? Kwok may have had a good reason, but how about Fred?—JIM LEARY, *Secretary*, One Putnam Park, Greenwich, Conn.

1937

Les Klashman reports that he is "still a commissioned officer in the U. S. Public Health Service and assigned to the Regional Office in charge of the water supply and water pollution control program for 10 northeastern states." Les; his wife Elizabeth; and their daughter, a freshman in high school, live on Staten Island, where they can see Sandy Hook from their front window. Edwin Herbig, Jr., is general sales manager of the E. F. Johnson Co. of Waseca, Minn. Ed is married and has four children, the oldest daughter a

sophomore at St. Mary's in Faribault, Minn. The Herbig's live at 620 East Elm Avenue, Waseca, Minn. We also understand that Walt Blake has moved from Minneapolis to Ridgewood, N. J., where he is employed by C. W. Brabender Instruments, Inc., of South Hackensack. Drop us a line, Walt, and fill us in with the details.

Ed Peterson is vice-president of the Rolling Mill Equipment Division of the Birdsboro Steel Foundry and Machine Co., Birdsboro, Pa. He is also active in the Association of Iron and Steel Engineers. Ed, his wife Therese, and their two children live at Pine Cone Farm, R.F.D. #2, Douglassville, Pa. Tom Kinraide, who was a very active member of our 20th reunion committee and who is now one of the solicitors for our class gift program in the Boston area, is in his own business with a partner as Bassett and Kinraide. They are specialists in power plant and industrial equipment, especially in dust control, conveying, and small turbines. Tom is active in Rotary and Boy Scouts and is a Sunday School teacher at his church. Sounds like plenty to keep you busy, Tom. The Kinraides—Tom, Claudia, and their two children—live at 113 Virginia Road, Waltham, Mass.

Dr. J. Eddie Lynn is an independent consultant to the textile and allied industries. He has written extensively on colloid chemistry and textile finishing. His latest article on "Plastic Foams, a New Textile Material" was published in the January issue of *Modern Textiles* magazine. Eddie's address is Post Office Box 734, Old Greenwich, Conn. Dr. Frank E. Goddard, Jr., is chief of the Aerodynamics and Propellants Department at the Jet Propulsion Laboratory of the California Institute of Technology. Frank was one of the 16 key scientists who helped to develop the first satellite, *Explorer I*. Let's hope they keep up the good work. Frank lives at 2861 Santa Anita Avenue, Altadena, Calif.

We continue our request for biographical sketches on the members of our Class. This issue those of us whose last name begins with either M, N, or O are specifically urged to send the pertinent information about the different positions they have held; their family; books, pamphlets, or articles they have written; their Army career; clubs; travels; and so forth.

The month of May brings to mind Alumni Day which, this year, is Monday, June 16. All on the campus once again with Boston Pops in Kresge in the evening. All of us should jot the date down on our calendar pad and make a real effort to attend. Hope to see a good crowd there at our table at the banquet.—ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford 55, Mass. S. CURTIS POWELL, *Assistant Secretary*, Room 5-323 M.I.T., Cambridge 39, Mass. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N. J.

1938

Let's start this batch of notes with a portion of a letter from Gordon Foote. He writes: "My family is growing up rapidly. We lead off with a daughter, aged 16 in June. She is a sophomore in high school and is already thinking about colleges.

Three boys follow along, 14, 10, and 6. So you can see, we, too, have our hands full. We are enjoying suburban living in Cincinnati. Except for four and one-half years with the Chemical Corps, 1941-45, I have been involved in product development and administration activities for Procter and Gamble since finishing at M.I.T. About four years ago I moved into my present position in technical employment."

Livingston Smith writes that he has been transferred by Stone and Webster Engineering Corporation from Richmond to Portsmouth, Va. He is superintendent of construction for a 150,000-kilowatt extension to the Portsmouth power station. He has two children: a girl, 12, and a boy, 8. We also find that John Bennett, who is married but has no family, is employed by the Seattle, Wash., branch office of the Alaska District Engineers.

Albert Kaufmann, who is vice-president and technical director of Nuclear Metals, Inc., is one of six men appointed to the advisory committee on nuclear engineering at Lowell Technological Institute. The group will serve as consultants for a program that will be the first of its kind in a publicly supported institution in New England.

Wenzel Wochos, one of our assistant secretaries, has been named assistant to the vice-president and general manager of the Watch Division of Elgin National Watch Company. Wenzel has been serving as manager of Elgin's case plant in Dayton, Ky. He is returning to Elgin, Ill., initially to co-ordinate consolidation of the Watch Division's facilities.

Howard Ness has been appointed manager, cost and statistics, by the American Steel and Wire Division of the U. S. Steel Corp. He joined the division's accounting department in 1938 and was made chief of the sales accounting section in 1943. In 1955 he was promoted to the position of supervisor of organization planning, and a year later became assistant manager, works accounting.

You are reminded that Alumni Day is Monday, June 16, and that the Boston Pops Orchestra will perform in Kresge that evening. — DAVID E. ACKER, *General Secretary*, Arthur D. Little, Inc., 35 Acorn Park, Cambridge 40, Mass.

1939

Bob Fife's son, Jamie, phoned the other day and the conversation went like this: "You know the baby we have been expecting over at our house? Well, we finally found out what it was. It's a girl."

Jamie is 10, and this gives you an idea of how things are seen through the eyes of 10-year-olds. Anyway, congratulations to Bob'40 and Maisie in their Number Five. Hilda and I get to see the Fifes, who live around the corner a block and a half away, once a month and get together for a pot-luck-poker-and-bridge couples club evening. Bob is an attorney in Redondo Beach; and he told me recently that while he deals mostly in civil cases, he recently took on a criminal case and won for his client. All classmates interested in civil or criminal cases or just interested in sending congratulations can

write Bob and Maisie at 279 Via Linda Vista, Redondo Beach, Calif.

George J. Thomas made the headlines, picture and all, in the New Bedford, Mass., papers when he was appointed assistant professor in the Physics Department of the New Bedford Institute of Technology. Since graduating George has had a wide experience with Glenn Martin, as a consulting engineer, and in the engineering and surveying of a number of housing developments.

Bernard Tremblay also was recognized recently when he was appointed assistant plant manager at the Paris Street plant of the Federal Pacific Electric Company at Newark, N. J. This plant is the country's largest molded-case circuit breaker production facility.

J. E. Hawkes received mention in the Phi Gamma Delta alumni magazine when he was appointed to be department manager in charge of engineering flight test of the F-104 for Lockheed at Palmdale, Calif. The Hawkses and their daughter, aged 11, live in Lancaster, Calif.

Elmer P. Wheeler, associated with the Monsanto Chemical Company, will be co-chairman of the general session at the Industrial Health Conference convention of the American Industrial Hygiene Association. The convention will be April 19 to 25 — probably too early to enjoy much of a swim, but not too early to savor some wonderful lobster at Atlantic City. — HAL SEYKOTA, *Assistant Secretary*, 416 Calle Mayor, Redondo Beach, Calif.

1940

Alumni Day is Monday, June 16, 1958. All events will be held at Tech with the Boston Pops Orchestra performing in Kresge Auditorium in the evening.

Amos Joel is the author of an article on telephone switching in the January, 1958, Bell Laboratories Record. Amos has been with Bell Laboratories since graduating from Tech and worked for a while in the fields of relay engineering and crossbar testing, later doing fundamental development studies, work on circuits for relay computers, and also teaching switching design. At present he is switch development engineer and responsible for systems co-ordination of the exploratory development of an experimental electronic switching system. Amos has over 40 patents as a result of his experimental work at Bell Laboratories.

Abe Gelbart, who received his doctorate with us and was formerly an assistant to Professor Wiener, has been appointed director of Yeshiva University's Institute of Mathematics. In addition, Abe will serve as editor of *Scripta Mathematica*. Abe, who is at present professor of mathematics and advisor to graduate students at Syracuse University, will undertake his new duties starting July 1, 1958.

John Vanderpoel is a lieutenant colonel in the U. S. Air Force and teaching Air Force R.O.T.C. at Tech. John has two sons: John, Jr., who is studying at Fenn School in Concord, Mass.; and Eric, who is studying at Taft School and hopes to enter Tech in the Class of '61.

Ed Jones has been elected vice-president in charge of research and development of the Metrix Corporation

of Newton, Mass. Formerly, Ed was chief engineer for the Electronics and Instrumentation Division of the Baldwin-Lima-Hamilton Corporation. Ed was vice-president of Ruge-deForest, Inc., prior to that firm's purchase by Baldwin.

John Lutz was a lecturer on "Piston Ring Design and Application in Automotive, Marine, and Industrial Engines" before the Society of Automotive Engineers, New England section, in Boston on March 4, 1958. John is general sales manager of the Wilkening Company.

Clark Goodman, who is assistant director for technical operations, Division of Reactor Development of the U. S. Atomic Energy Commission, has been appointed to the Advisory Committee on Nuclear Engineering at the Lowell Technological Institute, Lowell, Mass. Clark is one of six consultants on this new program to be established next September. — ALVIN GUTTAG, *Secretary*, Cushman, Darby and Cushman, American Security Building, Washington 5, D. C. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Room 16-325, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

1941

A welcome letter from John Murdock brings the following news: "In December Janet and I were invited to the Hargens' for dinner, and it turned out to be a 1941 reunion for the Philadelphia area. Beside our host and hostess, Mary and Bill Hargens, there were Lois and Herb Moody, Nancy and Sam McCauley, Jane and John Mullen, and the Murdocks. The McCauleys had just returned from Iran, where Sam had been inspecting the operations of the Consortium. He heads up this tremendous operation this year, which comprises the interest of a number of American oil companies in the old Anglo-Iranian Oil Company. They showed us some pictures that they had taken of this area and they told an exciting story of their trip. Nancy and Sam are flying enthusiasts, and they fly their own plane around this country a lot. In Iran they had a Con-
vair at their disposal. Jane and John Mullen now have four boys; and a few days after this party a baby girl arrived, which they named Jane Marie. Herb Moody has developed a number of artistic hobbies which contrast with his scientific work. Now he is sculpting. Bill Hargens is still with the Franklin Institute and still has the 1935 Ford which he had at M.I.T." Thanks a lot, John. Ed Beaupre also reports having seen John Mullen at Fort Monmouth, N. J., not long ago; John is with Wickes Engineering.

Carl Stewart's latest progress report goes as follows: "Effective March 1, my address will be Sylvan Heights Drive, Hollidaysburg, Pa. We found a home there which will be convenient for getting around in a wheel chair and only about a 20-minute drive from the Altoona Works of the Pennsylvania Railroad. I have been working in the Harrisburg office for the past month to get my hand in, and everything has been working out very well." We're all glad to hear it, Carl.

New positions: Roger Robertson, with B and H Instrument Co., Fort Worth,

Texas; Dave McNally, vice-president and general manager of Kleinschmidt Laboratories, Inc., Deerfield, Ill.; and Norton Polivnick, who, with three other Denver men, has formed a new architectural partnership. Otto Zmeskal has been appointed dean of the College of Engineering at the University of Toledo. Previously he was research professor in the College of Engineering at the University of Florida. He has taught at Armour Institute and M.I.T. and was professor and director of the Department of Metallurgical Engineering at Illinois Institute of Technology; has served as director of research for the Universal-Cyclops Steel Corp., Bridgeville, Pa.; and has engaged in research for various government organizations.

The Rockefeller Report on the state of the nation's defense was signed by 19 men, the list sounding like *Who's Who in America*. We can be proud that Ted Walkowicz was one of the group who contributed so much to the knowledge of the dangers facing the United States.

A Phi Gamma Delta publication gives this thumbnail biography of Frank Storm: "... lives in Amarillo, Texas, with his wife, Sarah Beth Storm, who is president of the Amarillo Junior League; and two sons, Frank 3d, 12, and Chris, 6 years. Since graduation, he has become operating partner of Storm, Hagy, and Harrman (petroleum production); vice-president and treasurer of Panhandle Drilling Co., Inc. (rotary oil well drilling); director of South Shore National Bank of Chicago, Ill.; and director of Estate Life Insurance Co. of Amarillo." Hank Avery has been elected to the Alumni Association National Nominating Committee for District 6. Bill Bowes has lost no time in getting into community service since his move to Pittsburgh; he appears in a picture of a meeting of the Mount Lebanon Lions Club. Also active in community affairs is Charles Wyckoff, who ran for the Needham, Mass., school committee in March.

Bob Fano and two other M.I.T. professors are administering a National Science Foundation grant for the translation of three Russian journals.

Don't forget Alumni Day, June 16: all on campus again, with the Boston Pops in Kresge Auditorium in the evening. — IVOR W. COLLINS, *Secretary*, 28 Sherman Road, Wakefield, Mass. HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Co., Grant Building, Pittsburgh 19, Pa.

1942

Now that the boating season is just about at hand, it is appropriate to quote liberally from an article that appeared in the sports section of the *New York Times* some months ago: "Weary Skipper Designs Automatic Foghorn — Timer Is Conceived After Eight Hours of Button-Pushing — A yachtsman-engineer and member of the United States Power Squadron of Norwalk, Conn., spins a Class A do-it-yourself yarn of the sea. He has ample proof it's true, not apocryphal.

"Richard L. Seidman is president of the Development Engineering Company and cruises off the New England Coast. Not long ago he stood an eight-hour

watch while navigating in fog, sounding his push-button foghorn so often he avers he just about wore out a finger.

"That did it. He went back to his laboratory and after some heavy thinking and experimenting popped up with an automatic fog signal timer. It blows the foghorn automatically and as regularly as clockwork.

"Nowadays a yachtsman caught in the fog can relax about the need to stand by. Instead of blowing or even pressing a button to actuate fog signals, he can flip a switch and have the timer blow the signal automatically. The price is \$39.50."

Dick has been involved in other interesting projects. For instance, his firm builds salt spray fog test chambers, fungus testing cabinets, and heat-humidity-pressure test booths. One of his hobbies is skin-diving. When cruising and staying in unfamiliar harbors, he often swims down to make sure his anchor isn't fouled. He has been down 50 feet in Port Jefferson, Long Island, Harbor.

The five Seidmans — Dick, Dotty, David, Billy, and a tremendous white dog — live in a very comfortable contemporary house they designed themselves, which sits on a bluff overlooking their boat anchorage, Norwalk Harbor and Long Island Sound.

A note from Lou Stouse tells us: "Have been with Western Electric for 12 years since I was separated from the Signal Corps (attached to the Army Air Field) as a first lieutenant. Am an area supervisor in Western Electric's Field Engineering Force. This is the twelfth city we have moved to in the ninth state. Am married and have one daughter in the first grade. My job is interesting and the traveling is enjoyable. However, Kate, my wife, is happy to be back in the Southeast and is looking forward to an indefinite stay in Winston-Salem, N. C." A brochure published for the Northeast Electronics Research and Engineering Meeting tells us that Dr. Robert Seamans, Jr., spoke on "Problems in Establishing a New Engineering Organization." Bob has been manager of the Airborne Systems Laboratory of Radio Corporation of America since 1955. He received a B. S. in Engineering from Harvard and then took his master's in Aeronautical Engineering with us. From 1941 to 1955 he was on the staff at Tech, most recently as an associate professor in the Aeronautical Engineering Department. He received his Ph.D. in 1951, and in 1953 was appointed director of Flight Control Laboratory at Tech.

William G. Denhard, presently of the Instrumentation Laboratory at Tech, spoke on "Inertial Navigation for a Space Trip to Mars" at a recent meeting of the Boston section of the American Institute of Electrical Engineers. R. Cecil Gentry presented a paper at the 163d national meeting of the American Meteorological Society on "Diurnal Variation of Wind, Temperature, and Pressure at Upper Levels in the Tropics." Edwin B. Judd gave a paper entitled "High Impulse Rate Demand Contact Device" at the Winter General Meeting of the American Institute of Electrical Engineers. Dr. Max A. Woodbury, Professor of Mathematics at New York University, spoke on "Mathematics and Statistics Used in Reliability" at the

Fourth National Symposium on Reliability and Quality Control in Electronics.

On a completely different note, we thought you might be interested in a summary of our Class's present financial status. I discovered that the most recent report was made in June, 1955, at which time we had a balance of \$39.75. Since that date the net of our receipts has been \$162.45, for a balance on hand of \$202.20. This amount restores our treasury to the level at which it had been some years ago and provides a minimum working balance for our next reunion, which seems way off in the distance of 1962. The records show that 174 men and women sent in their class dues. Our reunion was attended by 76 class members, with a total registration including wives and guests of 153 persons.

A note from Don Severance, Secretary-Treasurer of the Alumni Association, reminds us that Alumni Day will be held on Monday, June 16. All activities will be held on campus, particularly the late afternoon cocktail party on the lawn next to Kresge Auditorium and the Boston Pops Concert in Kresge, which follows the banquet.

A little further digging for local news yields the information that Bob Rines is, in addition to his music activities, the Gordon McKay lecturer on Patent Law at Harvard University. The series of lectures he gave last year was so enthusiastically received that he was asked to repeat the lectures this spring. The official subject is, "Patent Law and Its Relation to Science and Engineering." To a considerably smaller audience your Secretary spoke on "The Photographic Story of the Photon" to the Boston chapter of the Society of Photographic Scientists and Engineers. The publicity chairman of the organization felt constrained to add to the meeting notice the following: "Special note to physicists: The title of this talk is not to be construed as meaning the photographic story of light quanta!" An informal note tells us that S. Young Tyree, Jr., lives in Chapel Hill, N. C., with his wife and five children. Shep is a chemistry professor at the University of North Carolina.

Unquestionably, the long distance move of the month was made by John H. Thacher, Jr., who left San Francisco and is now with the Iran California Oil Company in London, England. A transcontinental move was made by Dr. George A. Thompson, Jr., who left Nyack, N. Y., for the School of Mineral Sciences at Stanford University in California. Willis H. Yocom traveled in the same direction from Murray Hill, N. J., and is now with Varian Associates in Palo Alto, Calif. A not much shorter move was made by Dr. Edward P. Todd, who has changed his residence from Stamford, Conn., to Boulder, Colo.

Considerably smaller distances have been covered by James M. Blackwood who is now in Bethlehem, Pa.; William G. Duvall, who is with the Western Electric Company in New York City; Captain David Lambert, now in Alexandria, Va.; Norman P. Pinto, now with the Beryllium Corporation in Hazelton, Pa.; G. Hoyt Whipple, Jr., now in Ann Arbor, Mich.; and Colonel Archie J. Knight, who has just transferred to the Air War College

in Maxwell Air Force Base, Alabama. Your *Secretaries* have all stayed put — ED EDMONDS in Albuquerque; JACK QUINN in Hawthorne; BOB KEATING in East Alton; and LOU ROSENBLUM at Photon, Inc., Cambridge 41, Mass.

1943

Your class officers are always on the move with an eye for items for these notes. Jim Hoey wrote that he met Bill Place and his wife at the Chemical Show in New York in February. Bill was there as a member of the Rocket and Satellite Division of the American Chemical Society. He is manager of the Missile Products Division of Beckman and Whitley, Inc., of San Carlos, Calif., and has been with the company since 1950. The Places have three daughters and live at 124 Tan Oak Drive, Portola Valley, Calif. Jim also visited with Mike Salvatore of Byram, Conn., who is an Edsel dealer in Greenwich. Jim said that he is working on a deal with Mike to furnish a fleet of Edsel convertibles for our reunion transportation committee.

Your Secretary and his wife enjoyed a pleasant visit with Gus and Hilda Calleja in Havana in February. Gus is still very active in the construction business and has recently formed a construction equipment rental company. The Callejas are planning to be at our reunion on Cape Cod in June and are excited with the prospect of seeing all of their friends again.

Gordon and Gloria Wadge of Metairie, La., became the parents of their fourth child on January 28; young Gordon Rodney weighed in at 7 pounds, 10 ounces. Other children are Geralyn, Gary and Geanie. Gene Eisenberg of Chestnut Hill, Mass., has recently joined the staff of Lilenthal and Becker, consulting engineers, in Boston. John Linville was chairman of the session on Transistor Circuits and a member of a panel discussing "Models for Systems" at the Western Electronic Show and Convention on the West Coast recently.

Tom Derby, Jr., of Hatboro, Pa., has been promoted to the newly created position of sales co-ordinator in American Viscose Corporation's Film Division. Tom is a member of the Institute of Food Technologists, American Society of Bakery Engineers, Packaging Institute, and National Potato Chip Institute, as well as being first vice-president of the Philadelphia Minute Men, a service organization. Gwynn Robinson, who, we remember, left us before graduation and established a brilliant record with the Air Corps, has been appointed assistant to the vice-president and general manager of Northrop International, a division of Northrop Aircraft, Inc.

We have news of classmates who received graduate degrees with our Class. Harrison E. Cramer was coauthor of three papers presented in January at the national meeting of the American Meteorological Society. The papers were based on experiments of Round Hill where he does his research work. Wilbur B. Davenport, Jr. and William L. Root, both with the Lincoln Laboratory of M.I.T., are authors of a new book published by Mc-

Graw-Hill entitled *An Introduction to the Theory of Random Signals and Noise*. Dr. J. Vincent Fitzgerald, Research Director of the Tile Council of America at Princeton, N. J., is credited with the development of two new cements designed to increase the use of ceramic tile in all types of building. Alfred Meyer was married in Plymouth, Mass., on January 18 to the former Mrs. Barbara Bubbins Guth. They will live in Bristol, R. I.

Our 15th reunion continues to occupy the top position in the news. By now you should have received your reservation cards and, I hope, mailed them in. Our guess is that about 150 people will attend, including the wives, of course. Your committee believes that the facilities of the Royal Club Hotel at Megansett Beach on Cape Cod, along with our terrific class spirit, will spell out a grand reunion. The affair runs from Friday afternoon, June 13, to Sunday afternoon, June 15. The usual Alumni Day at the Institute is on Monday, June 16, and will once again take place on the campus with a luncheon in the Great Court and dinner in the Rockwell Cage followed by a Boston Pops Concert in Kresge Auditorium.

Five years ago, the Reunion Committee published biographical data on many of our classmates in the class notes issues just prior to our 10th reunion. This time there are plans for a biographical booklet which we believe will be more appropriate for the occasion. Heartiest thanks to Kemp Maples for writing the April notes. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

1944

You can meet '44 classmates most anywhere. While I am driving along Route 128 about 7:45 A.M. one morning a Pontiac station wagon on my right blows the horn and tries to pass. Who am I to allow anyone to pass on the right? So down the accelerator goes, and the battle is on. Finally, after more persistent horn tooting, I recognize Justin Margolskee on his way to Bedford Airport. Justin is at the Raytheon Laboratories and is in charge of mechanical engineering out there. He is making his home in Waltham with his wife and two children, the second being a new arrival.

While wandering aimlessly in Sears Roebuck one Saturday afternoon, I noticed a familiar face but could not quite attach a name. After introducing myself I discovered that the unknown was Bob Smith. Bob finished up in meteorology and after the service worked on several government projects, finally going with Applied Research. Bob and family are presently living in Cohasset on an intriguing street called Haystack Lane.

At the Boston Boat Show I found Sam Parkinson hard at work trying to swap a local Chevrolet dealer a yawl for some \$30,000. Actually Sam was so hard at work here that I couldn't get too much on what he has been doing except what brought him to Boston. After trying out several stints in engineering, Sam is back to his first love — sailing. He is now a partner in Van Broom's International, an organization that sells foreign-built sailboats in the U. S. Sam can be found living

in Stamford and has acquired a wife and two children.

Some classmates are involved in the spectacular — as nuclear energy and satellites — and others are taking the prosaic and modernizing it. Such is the approach of Bill Schlegel, who is now president of Polly-Betts Undies. Bill finished up at Cornell and then went with Uncle Sam in the Marine Corps. His first business venture was as a manufacturer of men's and women's felt hat bodies. Eventually he decided to seek a new field, and he came to the conclusion that the bumper baby crops would provide a growing market. Closer inspection revealed there were few manufacturers of complete lines of nylon undies in the early days of 1950. So when two seamstresses, who had been with Vanity Fair until the mill decided to move south, decided to sell their nylon panty business, Bill bought it and expanded it. He kept the name Polly-Betts established by the women and hired them. Within a year he added nylon slips and in 1951 started to manufacture nylon sleepwear, too. The business grew so fast a new office building and factory were erected in 1953. Cottons joined the line in 1953 and flannel sleepwear in 1954. In addition to being president, Bill says he is also production supervisor, advertising manager, purchasing agent, sales manager, and general manager. With all this Bill and his wife Elizabeth design a complete line of little girls' lingerie three times a year. How does Bill break up the day? Why he has three sons, plays golf, and builds model trains.

Ralph Barclay was married last summer to Janet Baldwin of New Haven. Ralph has been working in Washington, D. C., and is currently approaching a doctorate in mechanical engineering at the University of Maryland. His M.S. was picked up at the University of Connecticut.

Bob Oppenlander has been elected a principal of Cresap, McCormick, and Paget, a management consulting firm of New York, Chicago, Washington, and San Francisco. Since joining the firm in 1953 Bob has been with the firm's general management division headquartered in New York and has specialized in production management studies. Previously he had held positions as production engineer, foreman, and assistant superintendent of Metals and Controls Corp. in Attleboro, Mass. After Tech, Bob received his master of business administration degree from Harvard in 1948. He now is living in Westport, Conn., with his wife and three children.

We have a short note from Bob Copsey who is living in Calabasas, Calif. Bob says he recently joined the horsey set by acquiring a seven-year-old sorrel gelding to go with his one acre rancho, which he designed and built. He is currently landscaping the area, which is located in Hidden Hills in west San Fernando Valley. On the rancho Bob has wife Laura; daughter Carol, three; and son Keith, five. For daily toil Bob is to be found at the Rand Corporation doing operations research on a U. S. Air Force project in Santa Monica. — BURTON A. BROMFIELD, *Secretary*, 72 Woodchester Drive, Weston 93, Mass.

We have been asked to remind all who read these notes that Alumni Day is scheduled for Monday, June 16, 1958; as in previous years it will be held entirely on campus, ending up with a Boston Pops concert in the Kresge Auditorium in the evening. Complete details will be found elsewhere in this magazine. Ted Malm (Ph.D. in Industrial Economics at M.I.T.) is now back in Berkeley serving as assistant dean of the School of Business Administration of the University of California. During the last academic year he was engaged as a consultant on personnel management for the European Productivity Agency of the Organization for European Economic Cooperation. With Paris as headquarters he and his family (wife Virginia and daughters Karen, 10, and Sandra, 9) traveled during the year from one end of the continent to the other. Prior to his E.P.A. assignment he spent a month in England and participated as discussion chairman in the Overseas Conference of the British Institute of Personnel Management, on the subject "Automation—Its Implications for Selection and Training." He reports friendly meetings with M.I.T. Alumni in Istanbul and Trondheim, among other places.

We have received notification of the death of John H. Zell on January 5, 1958. His home was at 95 Avon Way, Dayton 9, Ohio. Anyone having additional information, kindly write the undersigned.

Leonard Mandell of 44 Burlington Street, Providence 6, R. I., a consulting research engineer, has been appointed extension lecturer in air pollution for the spring semester at the University of Rhode Island. Leonard received his B.S. degree in Mechanical Engineering from the University of Alabama; his S.M. degree from M.I.T.; and an M.S. degree in Industrial Hygiene from Harvard University, School of Public Health. Ralph E. Huschke, a member of the program branch of the Geophysics Research Directorate, Air Force, Cambridge Research Center, Bedford, Mass., has been on the rubber chicken circuit lately, most recently giving a talk to a local organization on basic and applied research in the physics and chemistry of earth. The title of his talk was "The Significance of Satellites." Ralph has had a broad background in the study of the earth environment. Following graduation from M.I.T. he served with the Navy as a meteorologist both in aircraft hurricane reconnaissance and as a member of the 1946-47 Naval Antarctic Expedition. In 1948, after several months of flight weather forecasting for American Airlines, he joined the U. S. Weather Bureau in Hartford, Conn., where he served for three years until he moved to the Boston area as Weather Bureau field inspector for New England. Recalled to military service, his duty was as a prognostic analyst at the National Weather Analysis Center, Washington, D. C. He returned to Boston in 1954 to join the research staff at M.I.T. and to edit a technical dictionary for the American Meteorological Society. He assumed his present position in 1956.

The Sterling S. Bushnells and daughter Catherine Elaine live at 911 Sherwood

Road, Muskegon, Mich. Bush is a development engineer for Breneman-Hartshorn, Inc., of the same city. He is very active in his church choir. He is also on the board of directors of the Muskegon Junior Chamber of Commerce. He knew what he was doing when he volunteered for that job, though; because, by virtue of his position, he managed to get himself appointed chairman of the Miss Michigan Pageant. He says the job involves a lot of work, but adds parenthetically that it does have its interesting moments, too. We'll bet. That's the outfit which picks the Michigan girl who will go to Atlantic City to compete for the Miss America title. Doug Erickson has forsaken aerology for radiology. He took his M.D. degree from the University of Michigan in 1951 and his diploma from the American Board of Radiology in 1956; he is now a radiologist in the Radiology Department of the Francis A. Bell Memorial Hospital, Ishpeming, Mich. Doug is married, has one son, and lives at 621 North 4th Street, Ishpeming, Mich.

This column was not planned too well this month. I've been down with the flu for the past few days, and in a few hours must depart for my two-week annual Navy duty, so have tried to sandwich the typing between pills and packing. Hope to do better next month. — JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

1948

News from our Class is not too plentiful this month. Perhaps the storms of this past winter have contributed to our inactivity; and so, with the coming of spring, I'm sure we'll have more to write about next month.

We received word from Edward P. Mikol which indicates that he has deserted industry for education. Eddie left his position as research section head in the Research Department of the Carrier Corporation to become assistant professor of mechanical engineering at the University of Wisconsin.

Nathan Grier Parke, 3d, informs us that he is now associated with the Parke Mathematical Laboratories, Inc., a group of consulting applied mathematicians, now in their eighth year.

The newspaper clippings bring us a mixture of glad and sad tidings. In the field of romance, congratulations and best wishes are in order for two of our former bachelors! Robert A. Ginivan of Lowell, Mass., was recently wed to Miss Virginia Lavers of Everett, Mass. Bob is employed as a personnel manager with Monsanto Chemical Co. and is also pursuing the legal field. He is in his senior year at Suffolk Law School. Harry G. Jones of Garden City, Long Island, took Miss Mary Ann Sterling of Bronxville, N. Y., as his bride on January 25, 1958.

Our sadness is prompted by the news of the death of two of our Alumni. John J. Benjamin, 31, died February 1 at his home in Westport, Conn. John was the author of a book entitled *Cruising Boats Within Your Budget*, and he wrote several articles for magazines. He was chief research consultant for the Governor's Fact-Finding Committee on Education in Con-

necticut, and later was staff writer for the Public Education Association. John also was a columnist for a weekly newspaper, the *Westport Town Crier*. He is survived by his wife and son.

Dr. J. Neal Addoms, 37, of Wilmington, Del., died suddenly on January 31, 1958. Neal was staying at the Hotel Statler in New York City while attending a technical committee meeting of the American Institute of Chemical Engineers, and he apparently died in his sleep. He is survived by his wife and two sons. We would like to extend our sincere condolences to both families.

General notices bring us news as follows. Malcolm M. Bittel has been appointed assistant general manager of the Wayne George Corporation of Boston, Mass. Malcolm has been formerly associated with M.I.T.'s Instrumentation Laboratory. He is a senior member of the Institute of Radio Engineers. Congratulations and good luck to you, Malcolm, in your new position.

Chester Vincent Vappi is a candidate for appointment as a trustee of the Milton, Mass., Cemetery. Chester was unanimously appointed by the Selectmen and cemetery trustees last December to fill an unexpired term, and he is now seeking to continue in this capacity for a two-year term. He is president of Vappi and Company, Inc., Cambridge, Mass., building contractors. We wish you success in your endeavors, Chester.

The 163d National Meeting of the American Meteorological Society took place in New York City on January 27 through January 30. Glenn R. Hilst presented a paper at this meeting entitled, "Meteorological Parameters Related to the Diffusion of Stack Gases in Stable Atmospheres."

B. M. Gordon, who is president of Epsco, Inc., in Boston, Mass. announced that his company was awarded a contract valued at several thousand dollars for a wind tunnel instrumentation system for United Aircraft Corporation's Research Center in Hartford, Conn. The Winter General Meeting of the American Institute of Electrical Engineers, held at the Hotel Sheraton-McAlpin, New York, in February, had a representative from the Class of '48 in the person of Glenn W. Stagg. Glenn gave a paper (with H. P. St. Clair) entitled "Experience in Computation of Load Flow Studies Using High Speed Computer."

We hear that Henry M. Morgan has been appointed to the position of assistant director of Fabric Research Laboratories, Inc., at Dedham, Mass. Henry has been an assistant professor at M.I.T. since 1955, and he will continue to lecture there. He lives with his wife and five children on Old Concord Road, South Lincoln, Mass. Howard F. Marx is now chief of engineering research at Temco Aircraft Corporation in Dallas, Texas. He was in the engineering department at Convair's Fort Worth plant prior to joining Temco in 1955.

Your secretary, Bill Zimmerman, has recently assumed a new position as plant manager of the American Envelope Company in West Carrollton, Ohio. This is in addition to his former job as mill manager of the Moraine Paper Company, which is

a division of the American Envelope Company. He was also elected a member of the board of directors of the parent company.

We wish to thank Norman H. Kreisman '48, Vice-president of Isaac Goldman Company, Inc., for his very generous donation of the major art and manufacturing costs for the production of the Tenth Year Class Profile Book. This wonderful contribution will permit revenues from presubscriptions to be utilized to increase the scope of the statistical analyses and markedly improve the quality of the book.

Don't forget the class reunion in June. See you all there. — WILLIAM R. ZIMMERMAN, *General Secretary*, 6819 McEwen Road, Dayton 59, Ohio. R. H. HARRIS, *Assistant Secretary*, 26 South Street, Grafton, Mass.

1953

Last time I told you that we would start this month with a card from John Medgyesy. Right now, John is a manufacturing engineer at the Nuclear Products Division of Metals and Controls Corp. Before his present position John spent two years with Reynolds Jamaica Mines, Ltd. John comments: "My wife, children (John, 4; Susan, 3) and I enjoyed Jamaica very much, but we're all glad to be back in the United States again." John makes one further comment which I believe is worth noting: "I obtained both my present job and my last job through the Alumni Placement Bureau. Mrs. Yates and Mrs. Howe sure do provide excellent service." John, when you get a little more free time I wish that you would write and tell us of some of your experiences, professional and otherwise, while working in Jamaica.

A note from Don Severance tells me that Alumni Day will be Monday, June 16. "All on campus once again with the Boston Pops at Kresge in the evening."

John Ehrenfeld, now a lieutenant at the Army Chemical Center, writes: "Several classmates here — Arvid Strom, Bob Stollow. Al Danzberger left recently to return to A. D. Little."

A few marriages to report. First is that of Bob Fahey and Mary Elizabeth Brine of West Newton, Mass. James Johnston and Joan Elizabeth Buckley were married in the latter part of last year. A note from *Iota Muse*, M.L.T. Phi Gamma Delta periodical, reports the marriage of Carl Scheid. Carl is employed at the General Electric Company's X-ray Division in Milwaukee.

A newspaper clipping dated February 20, 1958, reports the death of Michael G. Dyer "after a long illness." Michael was employed by Lewis Shepard Products, Inc., of Watertown and is survived by his wife, Ann; and two sons, Michael and Joseph.

Louis Belknap has a position as process design engineer for Godfrey L. Cabot, Inc. Louis recently finished 21 months in the Army Chemical Corps, and I believe he was married on March 9 to Judith Leavitt. A few days ago I received a note from Mandy Manderson. Mandy and Anne have three children and spend much of their time in their "farmhouse" home in South Acton, Mass. As I copied these notes over I remembered one other

note, possibly because Marg and I have become so used to her that she seems older than her three weeks. Elizabeth was born on the 21st of February. I hope to see you at the reunion. — VINSON W. BRONSON, JR., 58 Greendale Road, Mattapan 26, Mass.

1954

One of the unofficial organizations which burst upon the scene during our tenure at Tech and is still kicking is that known as the Jolly Boys. George Schwenk, the group's corresponding secretary, sends a complete run-down on the present activities of the members. Some of these were reported in the March issue; others follow herewith. Sergie Chavez (the Chilean Comet) is working for the Andes Copper Mining Company in Potrerillos, Chile. Don Mott has returned to M.I.T. for reasons unknown. Bob Rohner has left the Army and is playing like a chemical engineer (according to George) in Boston. Dick Morley is working for an organization in Cambridge, Mass., which he calls Moronics (full title is Morley Electronics). Shel Kavesh is working for Standard Oil in New Jersey, and Stan Hoff has switched his allegiance from Western Electric to Raytheon.

Howard Cepurneek changed his last name to Tabb last June. He is a pilot-navigator-bombardier flying B-47's at Lincoln Air Force Base, Nebraska. He married Christina Schoefen of San Antonio, Texas, in May, 1956. Howard also sends word that Syd Balsbaugh has left the Air Force and is back home working for his father, and that Bob Adam is flying KC-97's at Salina, Kansas. Al Ward writes from Chicago, where he is teaching and studying at Northwestern University, that Bob Jones is a civilian research artist at the National Advisory Committee for Aeronautics laboratory at the Cleveland airport, and that Ray Rivero is working for the Joy Manufacturing Company in New Philadelphia, Ohio.

Felix Rapp writes that he has returned from an extended tour with the Army in Mainz, Germany, and is now back in New York looking for a job. John Rieman reports that he has joined the ranks at Harvard Business School after getting married, spending two years in France with the Army, and going through a training program with the Bulova Watch Company. I'm glad to see that somebody in the Class has been busy. A lengthy letter from Ray Rivero himself informs us that he has been with the Joy Manufacturing Company since graduation. Ray now has the title of industrial engineer at the New Philadelphia, Ohio, plant of that company, which seems to please him. He also writes that he bumped into Jerry Perry in Dallas while Jerry was in the Air Force. Jerry is married, and "must be a poppa by now" according to Ray. Ray says he heard a rumor that Jerry is presently teaching somewhere on the West Coast, and since we have learned from other sources that Jerry is indeed now living in West Los Angeles, the rumor may well be true.

Ernie Abrahamson sends word that he is now the assistant to the director of Watertown Arsenal Laboratories, having

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finally been caught by Uncle Sam. He picked up his Sc.D. in Metallurgy in the meantime, however. Ernie also reports that Gene Kovary has returned from two years in England with the Army, accompanied by his British bride. Gene is working for Du Pont in Newark, Del., where he is building a house and a family. Tom Bastis finally recovered enough from a New Year's party thrown by Emil Krejci and his wife to write us about it. In addition to Tom and his wife, Coley and Jan Bresee were in attendance. Tom says that Emil is now on his own as a working partner in a manufacturing firm which makes everything from drawing boards to guided missile components out of plastic. His own job at Kaiser Aluminum Company, Tom says, is still as interesting as ever. Tom, Emil, Coley, and families are all living in the general area of Oakland, Calif. And finally, Bill Sudduth reports that he is a senior engineer with the Electronics Systems Laboratory of the Federal Telecommunications Laboratories, division of International Telephone and Telegraph, working on inertial guidance and control systems development, in Glen Ridge, N. J. — EDWIN G. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10, Mo.

1955

Hi! I have caught up with a few people now! Chan Stevens was up for a visit from Aberdeen, where his latest achievement was a case of the measles. And I got a long letter from Denny Shapiro, who finds himself acting Thule Co-ordinator since his boss was sent back to the U. S. with ulcers! In addition, he is still teaching a University of Maryland extension course. Most of our news comes from these two sources. Not a word from John Seiler, who, when last heard of, had left Aberdeen and was hoping to work in India. (All right, John, if you don't want our public misinformed, you should give me an accurate account of yourself!)

Another Aberdeen alumnus, Joe Saliba, is back in Boston working, I understand. And Norry Hersey is heaven only knows where. He left Christmas Day for a trip around the world, Japan first stop, planning to return in April or whenever the money ran out! Chan says that the Army drove him to it! Sounds great, doesn't it? Marc Gross is out of the Army now, back with the U. S. Patent Office and still attending law school. And Bob Posner and Mike Horstein are civilians again, the former working for a Boston construction firm, the latter at Lincoln. And Walt Fritz, who became a free man again last September, is working in Winter Park, Fla. (lucky man!), in civil engineering. Glenn Jackson was job-hunting at last report, having been released from the Air Force a year early because his wing was disbanded — or some such! Pierre Casimir-Lambert is back in his native Belgium with the U. S. Air Force. And the Jacques Linders with their baby are planning to do some traveling in Europe this summer, when Jacques, who is still with the Air Force near Birmingham, England, takes a 30-day leave. Jim Murray '57 was stationed at Aberdeen, but has recently left with Pepper and the young'un for Fort

Meade. Dick Lamb was also at Aberdeen, but has left, destination unknown.

Denny was delighted to have business to do at Hanscom Field during his recent brief interlude in the U. S. He found Fred Morgenthaler, Bill Lehmann, and Al Schell there, all in the Air Force. And he found Mel Barkan in the Army at Fort Devens as an instructor. Herman Jacobs, too, is in the Army at Yuma, Ariz. Prentiss Cole has returned to Palo Alto from his Army duty in Germany and has somehow landed a job with the Cole Manufacturing Company, makers of precision rubber products. Lee Zuker, flying B-47's and B-26's at Holloman Air Force Base, New Mexico, was hoping to attend F-100 school in January.

Surendra Shah, who is in graduate school at M.I.T., and his wife recently participated in a meeting of the Central Baptist Church of Quincy at which they and other foreign students discussed the customs of their native countries. Recently married were Len Wharton, who is working for his doctorate at Harvard, and Judy Gordon. And Frank Scammell and Suzanne Kendall of Rochester, N. Y., an alumna of Wells College, were also married. The Scammells are now living in Arlington.

A final note: plans are complete for Alumni Day, Monday, June 16. This year I can recommend this event with semi-authority since I attended the daytime activities last year, though regretfully I missed hearing the Pops concert in Kresge Auditorium. I enjoyed it tremendously, particularly the delightful speech at the luncheon by the gentleman of the Class of "Ought-seven" who had himself made the mace which his Class presented to the Institute on the occasion of its 50th reunion. What clever people spring from M.I.T.! If you can make it, by all means, go. — MRS. J. H. VENARDE (Dell Lanier), *Secretary*, 107 Mullin Road, Wilmington 3, Del. **FIRST LIEUTENANT LABAN DENNIS SHAPIRO**, *Assistant Secretary*, AO 3047883 Signal Ionosphere Station, A.P.O. 23, New York, N. Y.

1956

Here it is May and the second anniversary of our coming out is at hand. The prospects of the new class are not as bright as those of the "most wanted." The economy has not affected many of our group because they are already receiving their income from the rich Uncle. In many phases the reported lack of scientists has been found to be only a poor utilization of the talent available. On this our second birthday, Alumni Day is June 16, with the high light another Pops evening in Kresge. Also, there will be the opportunity to see the Du Pont Athletic Center under construction as the first (and I hope not the last) major contribution from a '56 man.

One of the high lights at Tech this year is the Physical Science Committee. This group is in the process of producing instruction films and is at the presses with volumes II, III, and IV of its textbook. After reading Volume I, I will agree that this course is a definite departure from old methods. This is a step toward increasing the availability of basic science and mathematics at a level where it will help pro-

duce future scientists and improve the quality of the all important technicians.

Feature classmate of the month is Charles Greene, who graduated from VI-A in June '57 with his S.B. and S.M. In the fall he underwent special training at the Boulder Laboratories of the Bureau of Standards and on November 16, arrived at the South Pole. Charlie is a replacement scientist at the U. S. post there for the International Geophysical Year. We are sure his fame will be known far and wide as a member of the O.P.S.S.W. (Omnipotent Pole Sitters Society of the World).

Weddings and engagements for the month are led by Charles Berg's wedding to Judith Denenberg of New York last November. James Fleming will wed Betsey Ross of Fitchburg in June, when he graduates from Harvard Business School. David Goldman wed Karen Slovin of Chestnut Hill in December; Paul Hamburger was engaged to Paula Cohen of Brookline in January; Edward Kirkpatrick wed Kathleen Ione Siehr of Milford, Conn., in January; and John Merkl became engaged to Roberta Wilson of Chelmsford in January.

Military men this month are Second Lieutenant Frederick Baum, who is stationed near Stuttgart, Germany, and tours Europe in his spare time; Henry Herbig, who is stationed at the Naval Air Station at Kingsville, Texas; Benjamin Novins, who is at the Pearl Harbor Naval Shipyard as a ship superintendent; and Frederick Worsch, who has been nominated as a second lieutenant in the Regular Army while stationed at Fort Belvoir, Va.

Back on the home front Edward Copps is working at the Radio Corporation of America Airborne Systems Laboratory in Waltham; Gerard Dorget, after training at Poughkeepsie, is working in International Business Machines' Paris office; Harry Frumkin received his S.M. from Tech in 1957 and is now at California Research Corporation at San Francisco; Frank LaPrelle is with Creative Playthings in New York; James Royer is working for Chevrolet Research and Development on advance chassis design and development; Stephen Slenker is in Systems Development of Air Armament of Sperry Rand Corporation.

Phil Bryden should have his master's thesis in the past and is probably out of classes by the end of April again this year. Oh well, such is life. — **BRUCE B. BREDEHOFT**, *Secretary*, 1528 Dial Court, Springfield, Ill. **M. PHILIP BRYDEN**, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, P. Q., Canada.

1956G

The principal theme of the month is news about military personalities. Robert Maris Wilson is serving with the 13th Engineer Battalion, Seventh Infantry Division, an assignment sending him to South Korea. (Japan is so close and yet so far.) In Honolulu, T. H., at the Naval Shipyard, toils Lieutenant Robert Volz. His new title is senior ship superintendent for combatant ships. Bob's residence is 3813 Radford Drive. John B. Bidwell, of 28 Montclair Drive, West Hartford, Conn., has received a promotion to lieu-

tenant junior grade. His nautical duties are carried out at U. S. Naval Ammunition Depot, Hingham, Mass. Prior to his entry into the Naval Service, John held a position with the Manchester, Conn., Town Planning and Zoning Department.

Walter Knowles, Lieutenant, U. S. Army, has been through the 14-week officers' basic course at the Engineer School, Fort Belvoir, Va. According to the Army press bulletin: "Lieutenant Knowles received training in staff functions, combat operations, and military engineering." Formerly, Walter was employed as a civil engineer by Thomas Worcester, Inc., Boston. The Fort Lee, Va., Army press service furnishes news about John Martin, a Reserve Army Captain, who completed his reserve training at that Army post last year. John was a 1951 graduate of Rensselaer Polytechnic Institute and a classmate of ours in Mechanical Engineering. He is an engineer with The Texas Co., Beacon, N. Y. John and his wife, Beth, live on Ardmore Drive, Route 2, Wappingers Falls, N. Y. — **ENSIGN CHARLES T. FREEDMAN**, U. S. Navy, *Secretary*, U.S.S. Saratoga, CVA-60, F.P.O., New York, N. Y.

1957

That there is no dearth of creative engineers in the class of '57 is once again demonstrated by the recent birth of a baby to John Reed and his wife. John is presently working at the Institute's Instrumentation Laboratory. The end of January saw the wedding of Tom Thomas and Virginia Vaughan in Newton. Tom has continued to study at Tech after graduation last June. It seems that after four years at M.I.T., Don Norman and Martha Karpati have finally met each other at the University of Pennsylvania, where they are doing graduate work, for they have announced their coming wedding in June.

One of the most interesting exploits by our Class is that of Virginia Herman, who is at present a chemistry assistant at Sweet Briar College. She, along with a score of students from eight countries, volunteered to join an American Friends Service Committee work-camp in northern Finland last summer. One week end, the group planned a trip north; although the journey was not expensive, four Polish students would have been unable to go because their financial resources were limited. Her offer to pay for their share of the trip was accepted only on condition that she accept their invitation to visit them in Poland later in the summer. This she was able to do. In Poland, she was greeted with sincere friendliness by those whom she met. She found, amidst many extant ruins and indigent families, a new enthusiasm for freedom which accompanied Gomulka's return to power. Summing up her stay in Poland, Virginia says: "Nowhere else in Europe did I find such whole-hearted and unanimous friendliness towards America, even though the Polish people seem very much afraid that America has a bad opinion of them." — **ALAN M. MAY**, *Secretary*, 55 East End Avenue, New York 28, N. Y. **MARTIN R. FORSBERG**, *Assistant Secretary*, 8 Forest Street, Cambridge 40, Mass.

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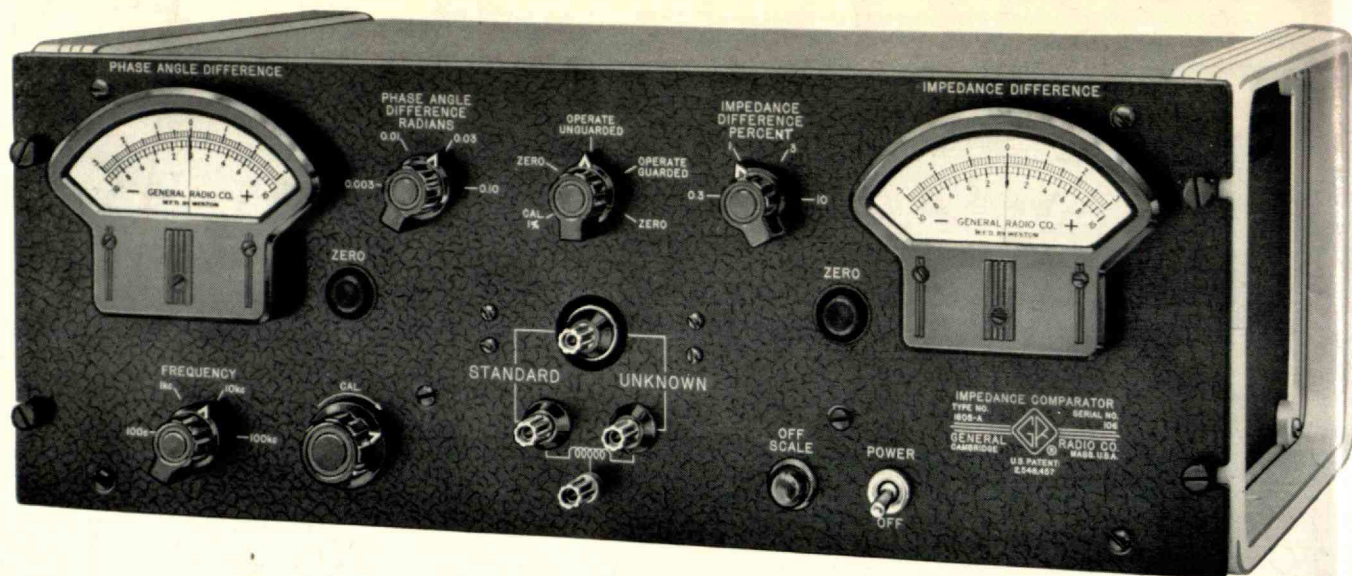
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